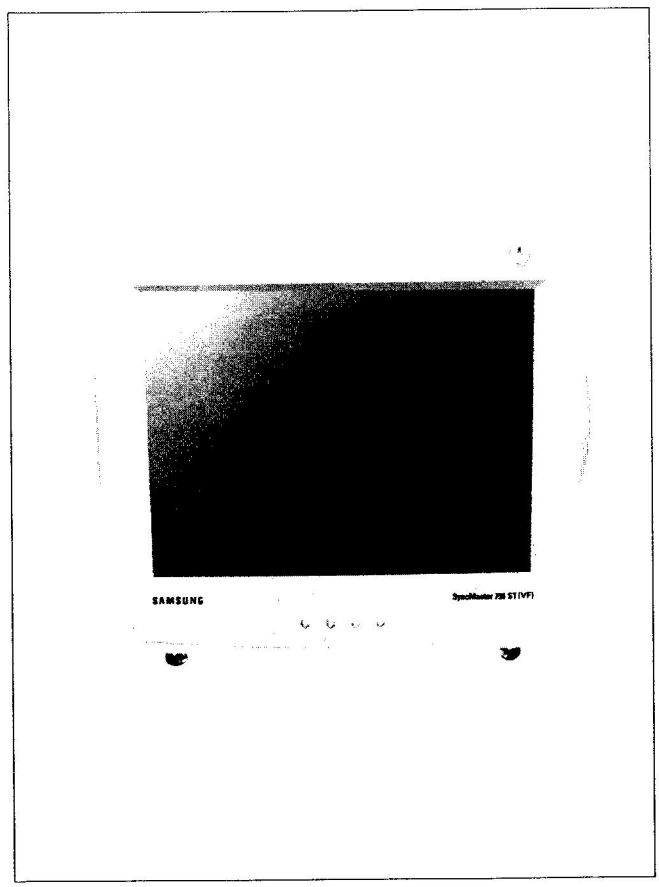
COLOR MONITOR

SERVICE Manual

COLOR MONITOR



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1 Precautions

1-1 Safety Precautions

WARNINGS

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power before servicing.
3. When the chassis is operating, semiconductor heatsinks are potential shock hazards.

1-1-1 Servicing the High Voltage and CRT :

WARNING: A high voltage adjusted to the wrong value may cause excessive X-ray emissions.

1. When servicing the high voltage system, remove the static charge by connecting a 10 kohm resistor in series with an insulated wire (such as a test probe) between the chassis and the anode lead.
2. When troubleshooting a monitor with excessively HV, avoid being unnecessarily close to the monitor. Do not operate the monitor for longer than is necessary to locate the cause of excessive voltage.
3. High voltage should always be kept at the rated value, no higher. Only when high voltage is excessive are X-rays capable of penetrating the shell of the CRT, including the lead in glass material. Operation at high voltages may also cause failure of the CRT or high voltage circuitry.
4. When the HV regulator is operating properly, there is no possibility of an X-ray problem. Make sure the HV does not exceed its specified value and that it is regulating correctly.
5. The CRT is especially designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the CRT only with one that is the same or equivalent type as the original.
6. Handle the CRT only when wearing shatterproof goggles and after completely discharging the high voltage anode.
7. Do not lift the CRT by the neck.

1-1-2 Fire and Shock Hazard :

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):
   WARNING: Do not use an isolation transformer during this test.
   Use a leakage current tester or a metering system that complies with American National Standards Institute (*ANSI C101.1, Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).
4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

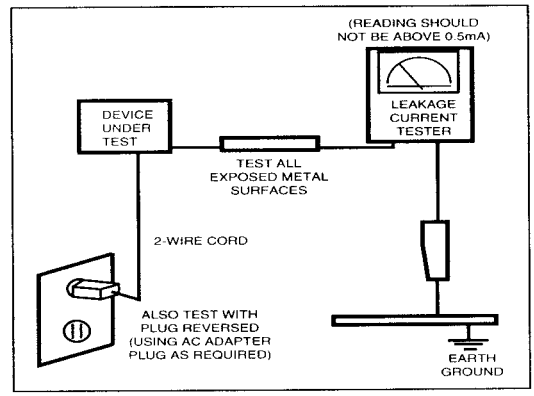

(READING SHOULD NOT BE ABOVE 0.5mA)
LEAKAGE CURRENT TESTER
DEVICE UNDER TEST
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

Figure 1-1. Leakage Current Test Circuit

1-1-4 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and / or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

Components identified by ☢ on schematics and parts lists must be sealed by a soldering iron after replacement and adjustment.

1-2 Servicing Precautions

WARNING1: First read the "Safety Precautions" section of this manual. If unforeseen circumstances create conflict between the servicing precautions and safety precautions, always follow the safety precautions.

WARNING2: A high voltage adjusted to the wrong value may cause excessive X-ray emissions.

WARNING3: An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet, and should be followed closely.
2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect all test components in parallel with an electrolytic capacitor.
3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
7. Never defeat any of the +B voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
8. Always connect a test instrument's ground lead to the instrument chassis ground *before* connecting the positive lead; always remove the instrument's ground lead last.

1-3 Electrostatically Sensitive Devices (ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.
9. ⚠ Indicates ESDs on the Schematic Diagram in this manual.

2 Product Specifications

2-1 Specifications

Item	Description
Picture Tube:	17-Inch (43 cm): 16-inch (40.6 cm) viewable, Full-square flat-face tube, 90° Deflection, Semi- tint, Non-glare, Invar shadow mask, Anti-static silica coating, 0.26 mm Dot pitch
Scanning Frequency	Horizontal : 30 kHz to 70 kHz (Automatic) Vertical : 50 Hz to 160 Hz (Automatic)
Display Colors	Unlimited colors
Maximum Resolution	Horizontal : 1280 Dots Vertical : 1024 Lines
Input Video Signal	Analog, 0.7 Vp-p positive at 70 Ω, internally terminated
Input Sync Signal	Separate Sync: TTL level positive/negative
Maximum Pixel Clock rate	110 MHz
Active Display	Horizontal : 306 mm ± 4 mm (4:3 ratio), Vertical : 230.5 mm ± 4 mm
Input Voltage	AC 90 to 264 Volts, 60 Hz or 50 Hz ± 3 Hz
Power Consumption	90 Watt (max)
Dimensions (W x D x H)	Unit : 16.55 x 16.89 x 15.90 Inches (420 x 429 x 403 mm) Carton : 21.02 x 21.73 x 21.02 Inches (534 x 552 x 534 mm)
Weight (Net/Gross)	37.5 lbs (17.0 kg) / 48.5 lbs (22.0 kg)
Environmental Considerations	Operating Temperature : 32°F to 104°F (0°C to 40°C) Humidity : 10 % to 80 %
	Storage Temperature : -4°F to 113°F (-20°C to 45°C) Humidity : 5 % to 95 %

- Above models comply with SWEDAC MPR II / TCO99 recommendations for reduced electromagnetic fields.
- Designs and specifications are subject to change without prior notice.

2-2 Pin Assignments

Sync Type / Pin No.	Separate	Macintosh
1	Red	GND-R
2	Green	Red
3	Blue	H/V Sync
4	N-C	Sense 0
5	DDC Return	Green
6	GND-R	GND-G
7	GND-G	Sense 1
8	GND-B	Reserved
9	N-C	Blue
10	GND-Sync/Self-raster	Sense 2
11	N-C	GND
12	DDC Data	V-Sync
13	H-Sync	GND-B
14	V-Sync	GND
15	DDC Clock	H-Sync

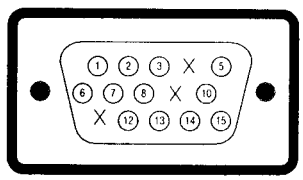


Figure 2-1. Male Type

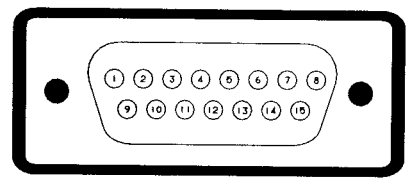


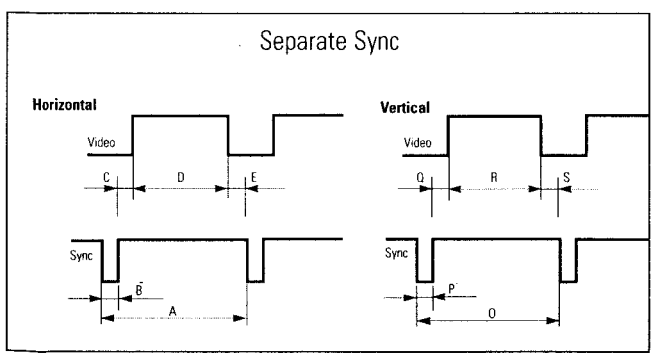
Figure 2-2. Male Type

2-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

Table 2-1. Timing Chart

Mode / Timing	IBM		VESA				
	VGA2/70 Hz 720 x 400	VGA3/60 Hz 640 x 480	640/85 Hz 640 x 480	800/75 Hz 800 x 600	800/85 Hz 800 x 600	1024/75 Hz 1024 x 768	1024/85 Hz 1024 x 768
fH (kHz)	31.469	31.469	43.269	46.875	53.674	60.023	68.677
A µsec	31.777	31.778	23.111	21.333	18.631	16.660	14.561
B µsec	3.813	3.813	1.556	1.616	1.138	1.219	1.016
C µsec	1.907	1.907	2.222	3.232	2.702	2.235	2.201
D µsec	25.422	25.422	17.778	16.162	14.222	13.003	10.836
E µsec	0.636	0.636	1.556	0.323	0.569	0.203	0.508
fV (Hz)	70.087	59.940	85.008	75.000	85.061	75.029	84.997
O msec	14.268	16.683	11.764	13.333	11.756	13.328	11.765
P msec	0.064	0.064	0.671	0.064	0.056	0.050	0.044
Q msec	1.080	1.048	0.578	0.448	0.503	0.466	0.524
R msec	12.711	15.253	11.093	12.800	11.179	12.795	11.183
S msec	0.413	0.318	0.023	0.021	0.019	0.017	0.015
Clock Frequency (MHz)	28.322	25.175	49.500	36.000	56.250	78.750	94.500
Polarity H.Sync	Negative	Negative	Negative	Positive	Positive	Positive	Positive
V.Sync	Positive	Negative	Negative	Positive	Positive	Positive	Positive
Remark	Separate	Separate	Separate	Separate	Separate	Separate	Separate



A : Line time total	B : Horizontal sync width	O : Frame time total	P : Vertical sync width
C : Back porch	D : Active time	Q : Back porch	R : Active time
E : Front porch		S : Front porch	

Memo

3 Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the SyncMaster 750ST(VF) monitor.

WARNING: This monitor contains electrostatically sensitive devices. Use caution when handling these components.

3-1 Disassembly

Cautions: 1. Disconnect the monitor from the power source before disassembly.
2. To remove the Rear Cover, you must use the special opening jig tool.

3-1-1 Cabinet Disassembly

1. With a pad beneath it, stand the monitor on its front with the screen facing downward and the base closest to you. Make sure nothing will damage the screen.
2. Remove the Stand from the monitor. (Refer to Stand manual)
3. Incline the monitor by lifting the rear of the monitor.

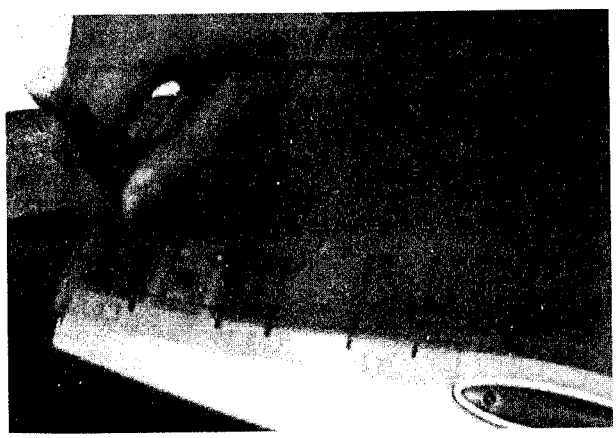


Figure 1

4. Push the Opening jig each groove along the top of the monitor till it makes a "ttak" sound. (2 grooves : Left and Right, Make sure each snap is disengaged.)

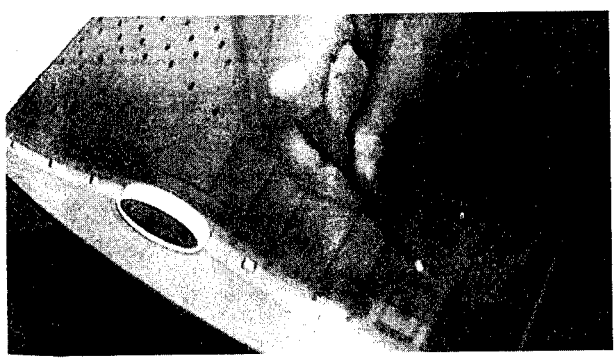


Figure 2

5. Squeeze the hold-snap on bottom of the monitor using your hand.
6. Insert the Opening jig into the groove then release the hold-snap.
7. When the hold-snap release, lift the Rear Cover slightly to make sure it doesn't re-engage while you release the snap on the other side.
8. In a similar manner, Release the hold-snap on the opposite side.
9. Pull the Rear Cover up off the monitor.
10. Using pinch-nose pliers or ling-nose pliers, acrefully disconnect the Anode Cap from the CRT.

Warning: **Do not touch the Anode contact on the CRT (High Voltage may remain).**

Note : If the hold-snap on the bottom of the Front Cover is broken, secure the cabinet by applying a 4x16 screw in the extra holes on each side of the cabinet.

3-1-2 Removing the CRT Socket PCB

1. Complete all previous steps.
2. Lift up the Video Spring and remove the CRT Socket PCB from the CRT.

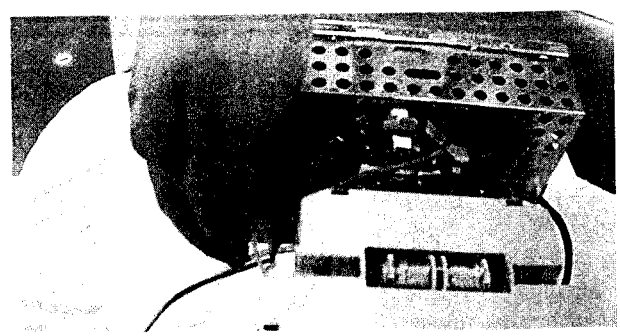


Figure 3

3. Disconnect all connectors on the CRT Socket PCB.
4. Using a solder iron, disconnect Ground (G2) on the back of the Video Shield and remove the Shield Cap.
5. Remove the screw on the front of the Shield Socket.
6. Desolder the 4 tabs on the CRT Socket PCB and remove Shield.
7. Place the Video PCB on a flat, level surface that is protected from static electricity.

3-1-3 Removing the Main PCB

1. Complete all previous steps.
2. Disconnect the Degaussing Coil at GT601 and GT602 on the Main PCB.
3. Disconnect all easily accessible ground wires on the Main PCB and Bottom Chassis.
4. Disconnect the DY connector at the CN303 connector on the Main .
5. Using the jig, release the snaps (2) connecting the Front Cover and Main PCB then lift up the Bottom to separate the two Shield.

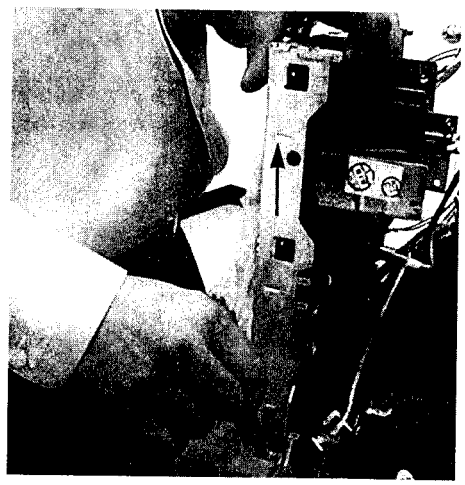


Figure 4

6. Remove the screws on the back and along each side of the Bottom Chassis.
7. Carefully lift the Main PCB Ass'y and remove the remaining ground wires.
8. Place the Main PCB Ass'y on a flat, level surface that is protected from static electricity.

3-1-4 CRT Ass'y Disassembly

1. Complete all previous steps.
2. Straighten the Degaussing Coil Assembly coated metal ties and lift the Coil Ass'y from the CRT.
3. Remove the four corner screws and lift the CRT up and away from the Front Cover Assembly and place it on a padded surface.

Caution: Do not lift the CRT by the neck.
If you will be returning this CRT to the monitor, be sure to place the CRT face downward on a protective pad.

3-2 Reassembly

Reassembly procedures are in the reverse order of Disassembly procedures.

4 Alignment and Adjustments

This section of the service manual explains how to make permanent adjustments to the monitor. Directions are given for adjustments using the monitor Interface Board Ver. 2.0 and software (Softjig).

4-1 Adjustment Conditions

Caution: Changes made without the Softjig are saved only to the user mode settings. As such, the settings are not permanently stored and may be inadvertently deleted by the user.

4-1-1 Before Making Adjustments

4-1-1 (a) ORIENTATION

When servicing, always face the monitor to the east.

4-1-1 (b) MAGNETIC FIELDS

Whenever possible, use magnetic field isolation equipment such as a Helmholtz field to surround the monitor. If a Helmholtz field is not available, frequently degauss the unit under test.

Caution: Other electrical equipment may cause external magnetic fields which may interfere with monitor performance.

Use an external degaussing coil to limit magnetic build up on the monitor. If an external degaussing coil is not available, use the internal degaussing circuit. However, do not use the internal degaussing circuit more than once per 30 minutes.

4-1-1 (c) WARM-UP TIME

The monitor must be on for 30 minutes before starting alignment. Warm-up time is especially critical in color temperature and white balance adjustments.

4-1-1 (d) SIGNAL

Analog, 0.7 Vp-p positive at 75 ohm, internal termination
Sync: TTL level, negative/positive

4-1-1 (e) SCANNING FREQUENCY

Horizontal: 30 kHz to 70 kHz (Automatic)
Vertical: 50 Hz to 160 Hz (Automatic)

Unless otherwise specified, adjust at the 1024 x 768 mode (68 kHz/85 Hz) signal.

Refer to Table 2-1 on page 2-3.

4-1-2 Required Equipment

The following equipment may be necessary for adjustment procedures:

4-1-2 (a) DISPLAY CONTROL ADJUSTMENT

1. Non-metallic (–) screwdriver: 1.5, 2.5, 3 mm
2. Non-metallic (+) screwdriver: 1.5, 2.5, 3 mm
3. Digital Multimeter (DMM), or Digital Voltmeter
4. Signal generator, or DM200 software
5. Software: Softjig or DM200
6. Interface Board Ver. 2.0 Code No. BH81-90001K
7. Parallel communications cable (25-pin to 25-pin); Code No. BH81-90001H
8. Signal cable (15-pin to 15-pin cable with additional 3-pin connector); Code No. BH81-90001J
9. 5 V DC adapter, not supplied
10. Personal computer

Note: Softjig Ass'y (includes items 6, 7 and 9) Code No. BH81-90001L

4-1-2 (b) COLOR ADJUSTMENTS

1. All equipment listed in 4-1-2 (a), above
2. Color analyzer, or any luminance measurement equipment

4-1-3 Connecting the SoftJig

Connect the monitor to the signal generator and/or PC as illustrated in Figures 4-1 and 4-2.

Note: The signal cable connector which includes the 3-wire cable must connect to the monitor. If you use Setup 2 (PC only, no signal generator) you can only make adjustments to the signal timing available on that computer system. To make corrections to all factory timings requires the use of an additional signal generator.

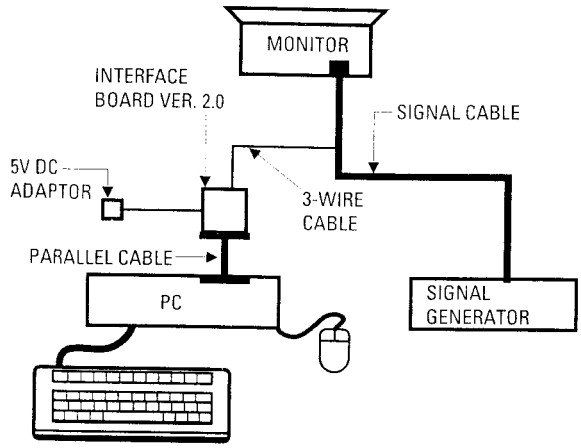


Figure 4-1. Setup 1, With Signal Generator

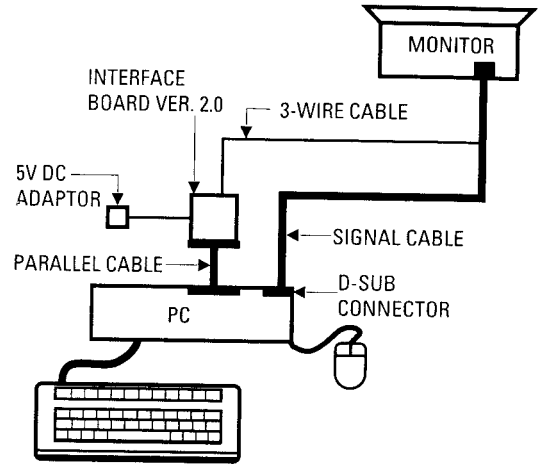


Figure 4-2. Setup 2, Without Signal Generator

4-2 Display Control Adjustments

4-2-1 HIGH VOLTAGE ADJUSTMENT

Signal: 1024 x 768 (68 kHz/85 Hz)
Display image: Don't care
Contrast: Minimum
Brightness: Minimum
Limit: 26.5 kV ± 0.2 kV

Measure the hight voltage level at the anode cap. High voltage should be within the limit as above. If the high voltage needs adjustment use the following procedure.

PROCEDURE

1. Turn the power off and disconnect the AC line cord from the power source.
2. Turn the power on after connecting high voltage Probe.
3. Using the jig, adjust the high voltage to the specification.

* High Voltage Adjustment PROCEDURE using Softjig

① Select matching model name in "Model" field.

② Select " @7: Zero Beam" in menu after selecting "Extra 1"

③ Adjust high voltage using control bar after selecting "HV MIN"

④ Turn the power off/on after adjustment finished.

⑤ Check the high voltage has been fixed with adjusted value after reselecting "@7: Zero Beam".

4-2-2 SCREEN VOLTAGE ADJUSTMENT

CONDITIONS

Signal: 1024 x 768 (68 kHz/85 Hz)
Display image: Don't care
Contrast: Minimum
Brightness: Minimum
Limit: 26.5 kV ± 0.2 kV

Screen Voltage adjustment procedure using softjig is all the same as 4-2-1 but selecting "G2 CONT" on the contrary to "HV MIN".

Table 4-1

	CRT type	Screen Voltage
SDD	M41QAQ261X011	520V ± 10V
TSB	M41LH507XX443	630V ± 10V
PHS	M41EJB523X170	570V ± 10V

4-2-3 CENTER RASTER

Adjust SW401 so that the back raster comes to the center when you apply each basic mode.

4-2-4 Centering

Centering means to position the center point of the display in the middle of the display area. Horizontal size and position and vertical size and position control the centering of the display.

Adjust the horizontal size and vertical size to their optimal settings: 306 mm (H) x 230 mm.

Adjust the horizontal position and vertical position to ≤ 4.0 mm of the center point of the screen.

| A-B | ≤ 4.0 mm. | | C-D | ≤ 4.0 mm.

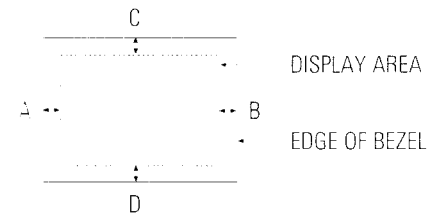


Figure 4-3. Centering

* In Softjig window, "Geometry" has to be selected for GD adjustment.

4-2-4 (a) HORIZONTAL SIZE ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

Use control bar after selecting "H-SIZE" in left menu to adjust the horizontal size of the display pattern to 306 mm . (Tolerance: ± 3 mm.)

If "H-SIZE" is not enough to adjust it, select "SIZE B+" by turns.

4-2-4 (b) VERTICAL SIZE ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

Use control bar after selecting **"V-SIZE"** in left menu to adjust the vertical size of the display pattern to 230 mm. (Tolerance: ± 3 mm.)

4-2-4 (c) HORIZONTAL POSITION ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz (
Display image: Crosshatch pattern

Use control bar after selecting **"H-POSITION"** in left menu to center the horizontal image on the raster.

4-2-4 (d) VERTICAL POSITION ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern

Use control bar after selecting **"V-POSITION"** in left menu to center the vertical image on the raster.

4-2-5 Linearity

Linearity affects the symmetry of images as they appear on the screen. Unless each row or column of blocks in a crosshatch pattern is of equal size, or within the tolerances shown in Tables 4-2 and 4-3, an image appears distorted, elongated or squashed.

Table 4-2. Standard Modes Linearity: 640x480/75Hz, 800x600/85Hz and 1024x768/85Hz

	Standard Modes Linearity	
	Each block (10 %)	Difference between adjacent blocks (4 %)
4 : 3	Horizontal: 18.2~20.1 Vertical : 18.2~20.1	Horizontal: Less than 0.77 mm Vertical : Less than 0.77 mm
5 : 4	Horizontal: 17.1~18.9 Vertical : 18.2~20.1	Horizontal: Less than 0.72 mm Vertical : Less than 0.77 mm

Table 4-3. Other Modes Linearity: VGA, SVGA, XGA, MAC, etc.

	Supported Timing Mode	
	Each block (10 %)	Difference between adjacent blocks (5 %)
4 : 3	Horizontal: 17.8~20.5 Vertical : 17.8~20.5	Horizontal: Less than 0.96 mm Vertical : Less than 0.96 mm
5 : 4	Horizontal: 16.7~19.2 Vertical : 17.8~20.5	Horizontal: Less than 0.90 mm Vertical : Less than 0.96 mm

4-2-5 (a) HORIZONTAL LINEARITY ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

To adjust the Horizontal Linearity, refer to Tables 4-2 and 4-3 for the tolerance range.

Increase or decrease **H_LIN** to optimize the image.

4-2-5 (b) VERTICAL LINEARITY ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

To adjust the Vertical Linearity, refer to Tables 4-2 and 4-3 for the tolerance range.

Use control bar after selecting **"V-LINEARITY BAL"** in left menu to optimize the image.

4-2-6 Trapezoid Adjustment

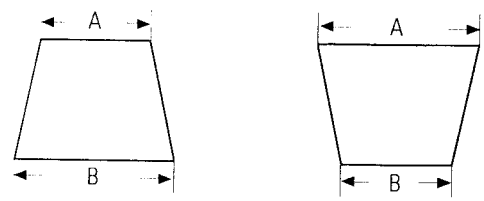
CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Crosshatch pattern
Brightness: Maximum
Contrast: Maximum

Use control bar after selecting **"TRAPEZOID"** in left menu to make the image area rectangular.

Figure 4-4. Trapezoid

| A - B | < 4 mm



4-2-7 Pinbalance Adjustment

CONDITIONS

Scanning frequency:	68 kHz/85 Hz
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

| D1 |, | D2 | ≤ 2.0 mm

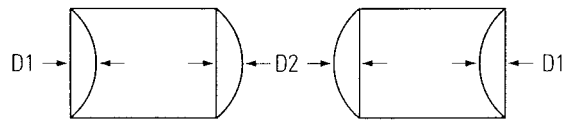


Figure 4-5. Pinbalance

Use control bar after selecting **"PINBALANCE"** in left menu to optimize the image.

4-2-8 Parallelogram Adjustment

CONDITIONS

Scanning Frequency:	68 kHz/85 Hz
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

Use control bar after selecting **"PARALLEL"** in left menu to make the image area rectangular.

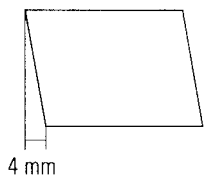


Figure 4-6. Parallelogram

4-2-9 Side Pincushion Adjustment

CONDITIONS

Scanning frequency:	68 kHz/85 Hz
Display image:	Crosshatch pattern

Use control bar after selecting **"PINCUSHION"** in left menu to straighten the sides of the image area.

4-2-10 Tilt Adjustment

CONDITIONS

Scanning Frequency:	68 kHz/85 Hz
Display image:	Crosshatch pattern
Brightness:	Maximum
Contrast:	Maximum

Use control bar after selecting **"ROTATION"** in left menu to correct the tilt of the display.

| C1 |, | C2 | ≤ 2.0 mm, | D1 |, | D2 | ≤ 2.0 mm.

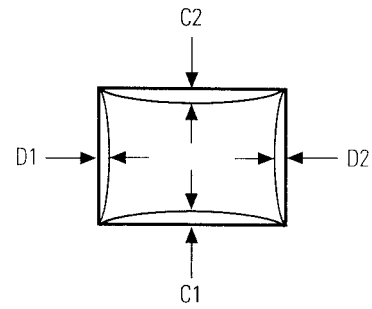


Figure 4-7. Pincushion

4-2-11 Degauss

No adjustments are available for the degaussing circuit. The degaussing circuit can effectively function only once per 30 minutes.

4-2-12 To Delete the User Mode Data

To delete the adjustment data from the user modes, click **"@4: USER DELETE"** in right ment.

4-2-13 Save the Data

To save the adjustment data for a mode, press **"@3: ALL MODE SAVE"** in right ment.

4-3 Color Adjustments

CAUTION: Check below condition before color adjustment
Video signal : Analog 0.7 Vp-p (at 75 Ω)
Sync : TTL level (H, V seperate signal)

* Select "Color" in Softjig menu for color adjustment.

4-3-1 Color Coordinates (Temperature)

Color temperature is a measurement of the radiant energy transmitted by a color. For computer monitors, the color temperature refers to the radiant energy transmitted by white. Color coordinates are the X and Y coordinates on the chromaticity diagram of wavelengths for the visible spectrum.

CONDITIONS

Measurement instrument: Color analyzer
Scanning frequency: 68 kHz/85 Hz
Display image: White flat field at center of display area
Luminance: Maximum

PROCEDURE

Use the directions in sections 4-3-2 through 4-3-3 to adjust the color coordinates for:
9300K to x = 0.283 ± 0.02, y = 0.298 ± 0.02
6500K to x = 0.313 ± 0.02, y = 0.329 ± 0.02

4-3-2 Color Adjustments for 9300K

4-3-2 (a) BACK RASTER COLOR ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Back raster pattern
Brightness: Maximum
Contrast: Maximum

1. Select **"@1: CHANNEL 1"** in right menu to control the color for 9300K.
2. Adjust the luminance of the back raster to between 0.5 to 0.7 ft-L using contron bar after selecting **"GREEN CUTOFF"** in the menu.
3. Use control bar after selecting **"BLUE CUTOFF"** in left menu to set the "y" coordinate to 0.298 ± 0.02.
4. Use control bar after selecting **"RED CUTOFF"** in left menu to 0.283 ± 0.02.

* If color values would not be matched desirable values, repeat sequence 3 and 4 after readjusting "GREEN CUTOFF" control a little different.

4-3-2 (b) WHITE BALANCE ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: White box pattern
Brightness: 0.06ft-L at Back Raster Pattern Display
Contrast: Maximum

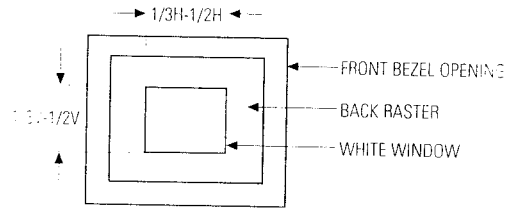


Figure 4-8. White Box Pattern

1. Use control bar after selecting "RED GAIN", "GREEN GAIN" and "BLUE GAIN" to adjust the luminance to 46 ft-L with the color coordinates ranged for 9300K to x = 0.283 ± 0.02, y = 0.298 ± 0.02.

   exception) 17" SDD CRT type-named (*/S-2) : 42ft-L.

4-3-2 (c) ABL ADJUSTMENT

CONDITIONS

Scanning frequency: 68 kHz/85 Hz
Display image: Full white pattern
Brightness: Maximum
Contrast: Maximum

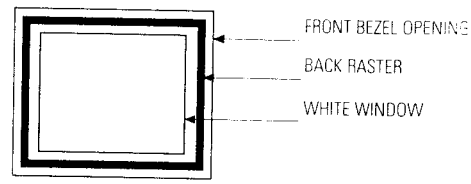


Figure 4-9. Full White Pattern

1. Check the ABL. If it is not within the specifications, use the ABL controls to adjust it. (36 ± 1 ft-L)
2. Select **"@4: COLOR SAVE"** to save the data.
3. Select **"@6: ALL COLOR SAVE"** to save the CH2.

4-3-2 (d) WHITE BALANCE ADJUSTMENT VERIFICATION

CONDITIONS

Scanning frequency: 68 kHz/85 Hz

Display image:	Back raster pattern Full White Pattern
X-Y Coordinates:	x = 0.283 ± 0.02, y = 0.298 ± 0.02
ABL Luminance	Refer to 4-3-2(c)
Brightness:	Maximum
Contrast:	5 ft-L, 24 ft-L

1. Check whether the color coordinates of the back raster satisfy the above spec.

   If they do not, return to 4-3-2 (a) and readjust all settings.
2. Display a full white pattern.
3. Select "Geometry" in softjig menu.
4. Select "@7: 5-ft " in right menu.
5. Check whether the white coordinates of the video meet the above coordinates spec.
6. Select "@8: 24-ft " in right menu.
7. Check whether the white coordinates of the video satisfies the above spec.

   If they do not, return to 4-3-2 (a) and readjust all settings.

   Select "Color" and click "@2: CHANNEL 2" for color ajdustment for 6500K
   Repeat the sequence of 9300K adjustment.
   The luminance values the same as 9300K, but the color coordinated of back raster and white box are : x = 0.313 ± 0.02 y = 0.329 ± 0.02

4-3-3 Luminance Uniformity Check

Luminance is considered uniform only if the ratio of lowest to highest brightness areas on the screen is not less than 7.5:10.

CONDITIONS

Scanning frequency:	68 kHz/85 Hz (1024 x 768)
Display image:	White flat field
Brightness:	Cut off point at 24 ft-L
Contrast:	Maximum

PROCEDURE

Measure luminance at nine points on the display screen (see figure below).

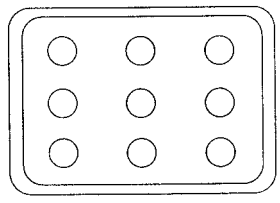


Figure 4-10. Luminance Uniformity Check Locations

4-3-4 Focus Adjustment

CONDITIONS

Scanning frequency:	68 kHz/85 Hz (1024 x 768)
Display image:	"H" character pattern
Brightness:	Cut off point
Contrast:	Maximum

PROCEDURE

1. Adjust the Focus VR on the FBT to display the sharpest image possible.
2. Use Locktite to seal the Focus VR in position.

4-3-5 Color Purity Adjustment

Color purity is the absence of undesired color. Conspicuous mislanding (unexpected color in a uniform field) within the display area shall not be visible at a distance of 50 cm from the CRT surface.

CONDITIONS

Orientation:	Monitor facing east
Scanning frequency:	68 kHz/85 Hz)
Display image:	White flat field
Luminance:	Cut off point at the center of the display area

Note: Color purity adjustments should only be attempted by qualified personnel.

PROCEDURE

For trained and experienced service technicians only.

Use the following procedure to correct minor color purity problems:

1. Make sure the display is not affected by external magnetic fields.
2. Make sure the spacing between the PCM assembly and the CRT stem is 29 mm ± 1 mm.
3. Display a green pattern over the entire display area.
4. Adjust the purity magnet rings on the PCM assembly to display a pure green pattern. (Optimum setting: x = 0.295 ± 0.015, y = 0.594 ± 0.015)

Table 4-4. Color Purity Tolerances

Red:	x = 0.640 ± 0.015	y = 0.323 ± 0.015
Green:	x = 0.295 ± 0.015	y = 0.594 ± 0.015
Blue:	x = 0.142 ± 0.015	y = 0.066 ± 0.015

(For 9300K color adjustment: x = 0.283 ± 0.02, y = 0.298 ± 0.02)

5. When you have the PCMs properly adjusted, carefully glue them together to prevent their movement during shipping.

Memo

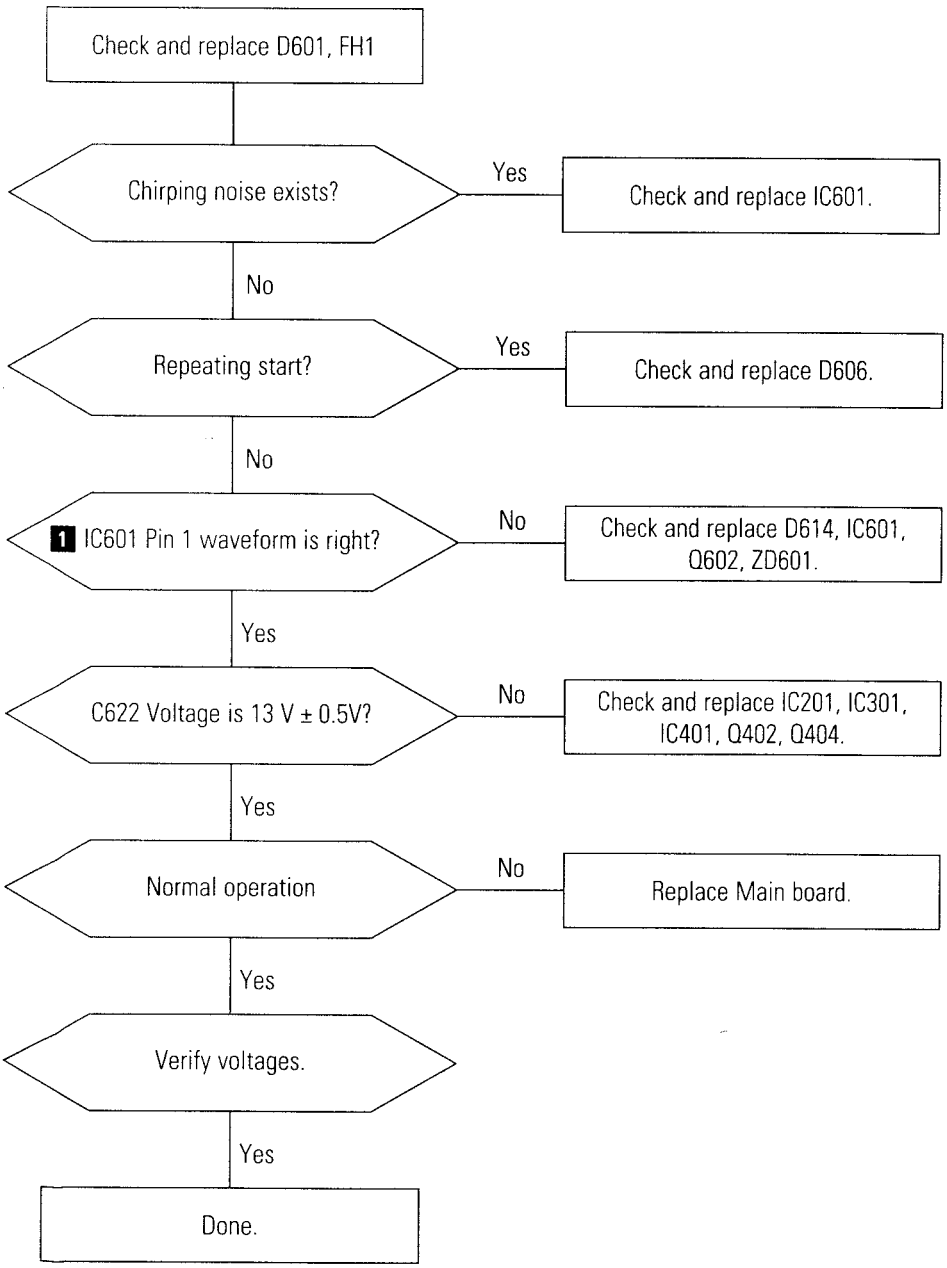
5 Troubleshooting

5-1 Parts Level Troubleshooting

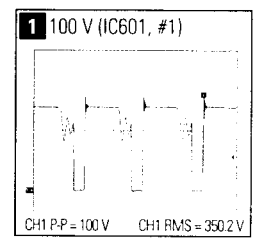
Notes: Check the following circuits.

- No raster appears: Power circuit, Horizontal output circuit.
- High voltage develops but no raster appears: Video output circuits.
- High voltage does not develop: Horizontal output circuits.

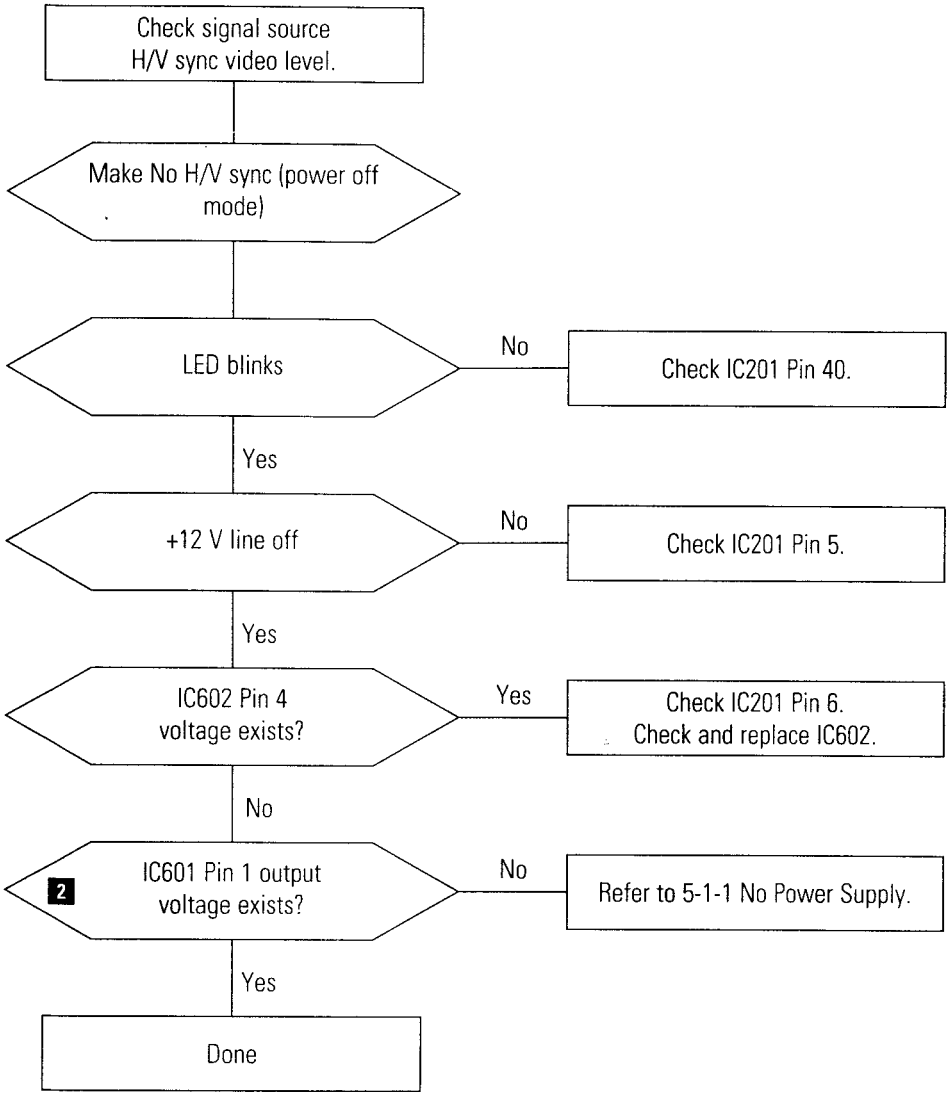
5-1-1 No Power Supply



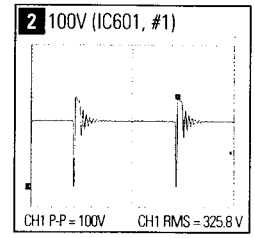
WAVEFORMS



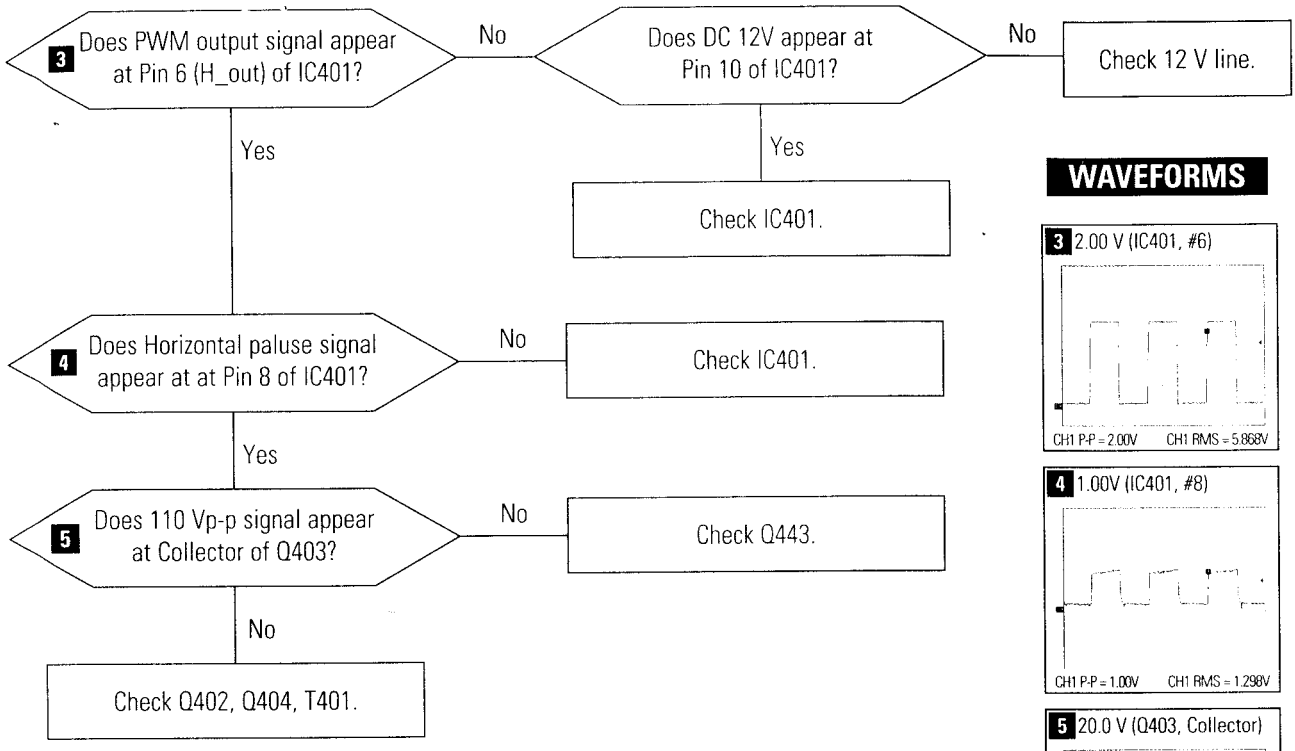
5-1-2 DPMS Failure



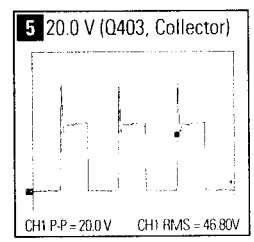
WAVEFORMS



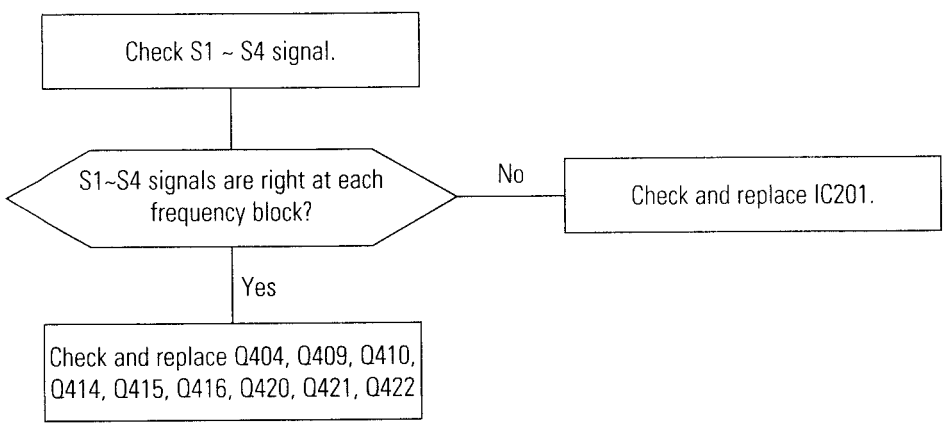
5-1-3 H_Deflection Failure



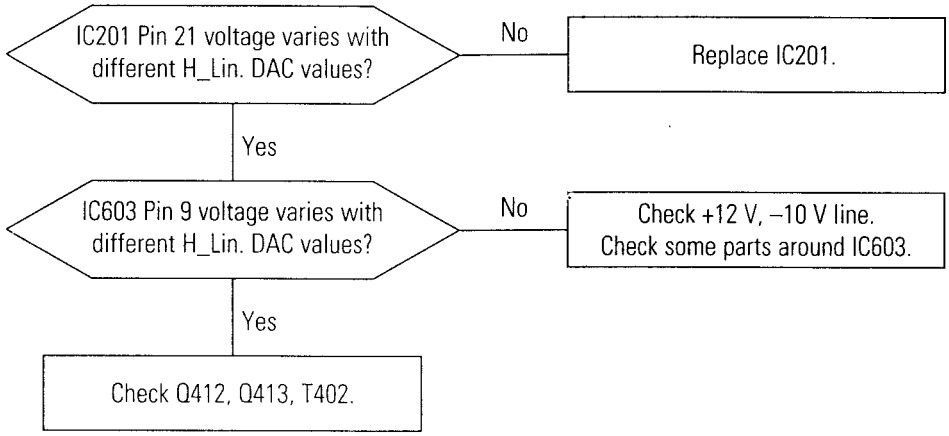
WAVEFORMS



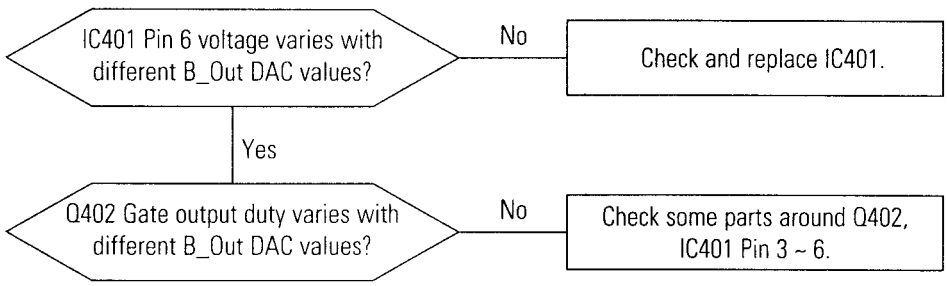
7-1-4 S Correction Failure


Check S1 ~ S4 signal.
S1~S4 signals are right at each frequency block?
No
Check and replace IC201.
Yes
Check and replace Q404, Q409, Q410, Q414, Q415, Q416, Q420, Q421, Q422

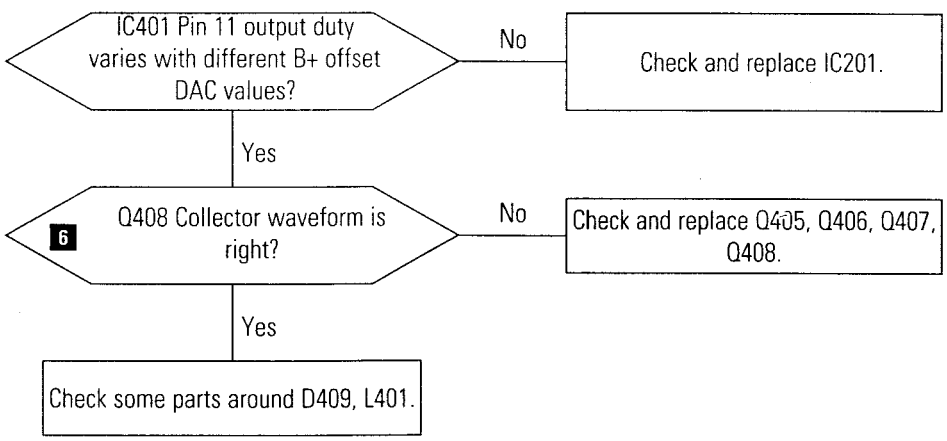
5-1-5 H_Lin. Failure


IC201 Pin 21 voltage varies with different H_Lin. DAC values?
No
Replace IC201.
Yes
IC603 Pin 9 voltage varies with different H_Lin. DAC values?
No
Check +12 V, –10 V line.
Check some parts around IC603.
Yes
Check Q412, Q413, T402.

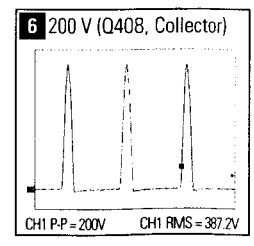
5-1-6 Invariable H_Size


IC401 Pin 6 voltage varies with different B_Out DAC values?
No
Check and replace IC401.
Yes
Q402 Gate output duty varies with different B_Out DAC values?
No
Check some parts around Q402, IC401 Pin 3 ~ 6.

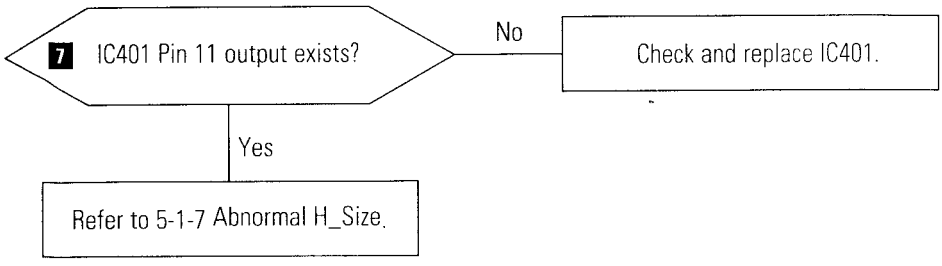
5-1-7 Abnormal H_Size



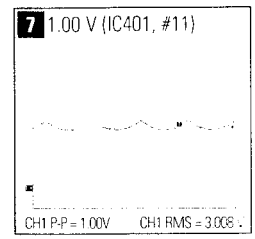
WAVEFORMS



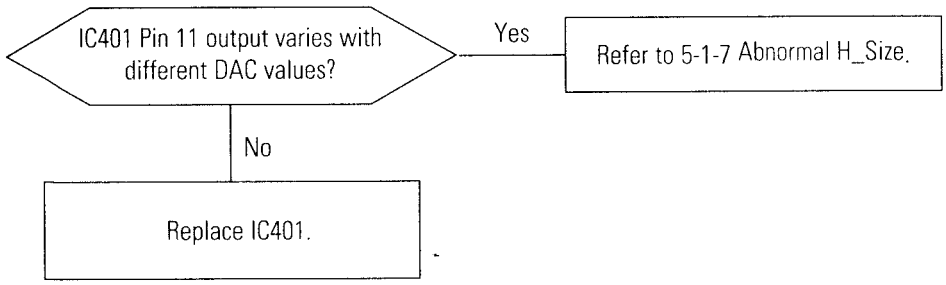
5-1-8 Side Pin or Trap Failure



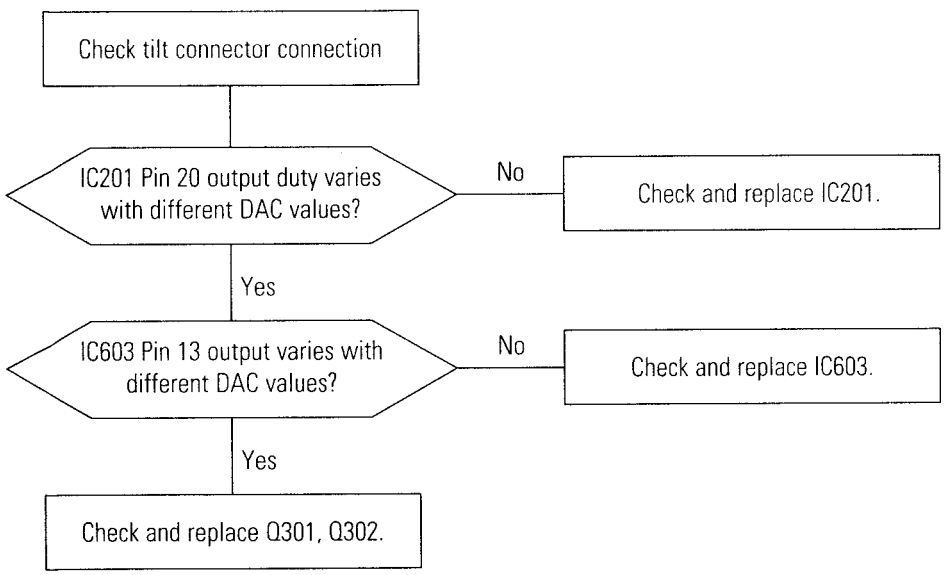
WAVEFORMS



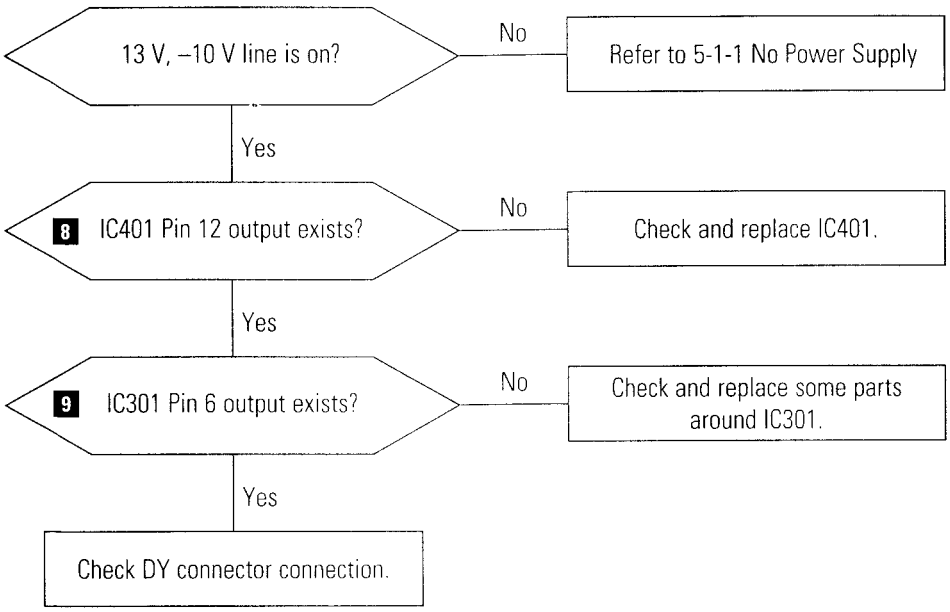
5-1-9 Para. or Pin Balance Failure



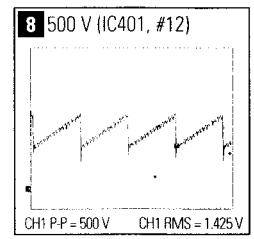
5-1-10 Tilt Failure

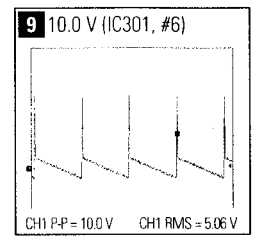

Check tilt connector connection
IC201 Pin 20 output duty varies with different DAC values?
No
Check and replace IC201.
Yes
IC603 Pin 13 output varies with different DAC values?
No
Check and replace IC603.
Yes
Check and replace Q301, Q302.

5-1-11 V Deflection Failure

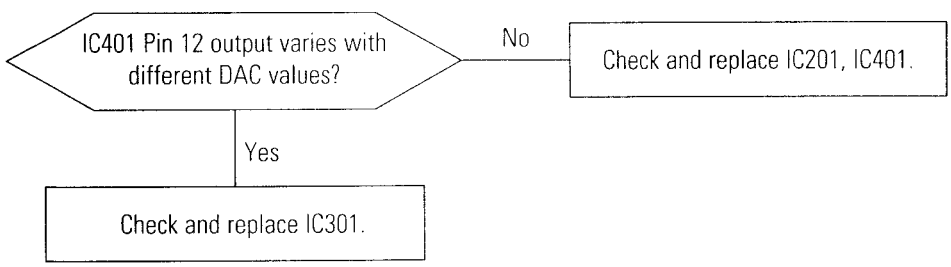


WAVEFORMS

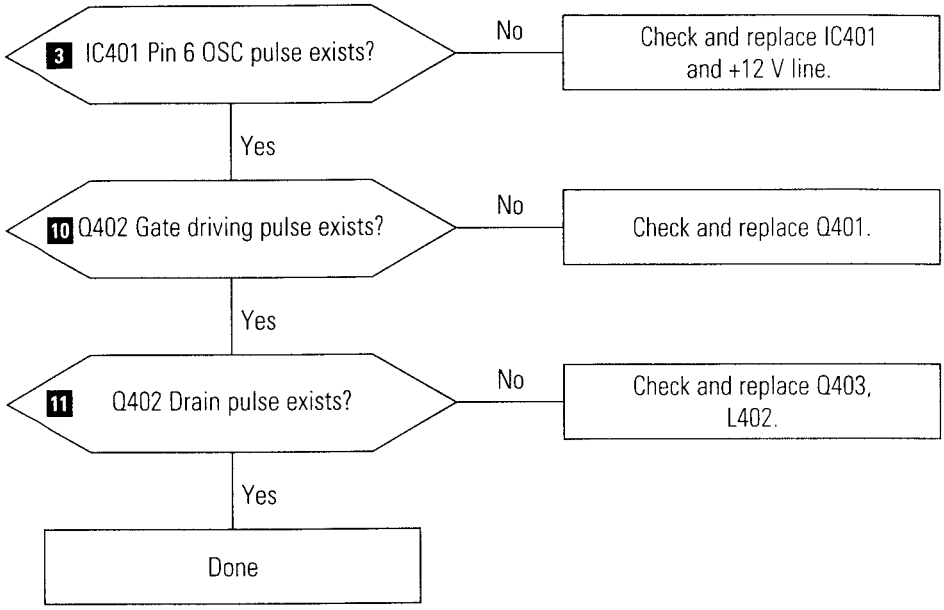




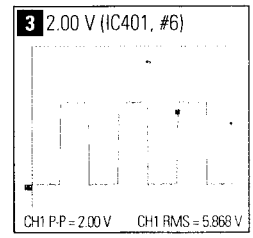
5-1-12 V Size or Pos. Variation Failure

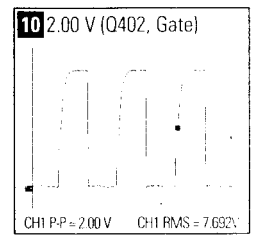


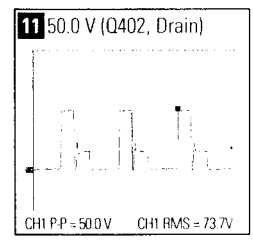
5-1-13 High Voltage Failure



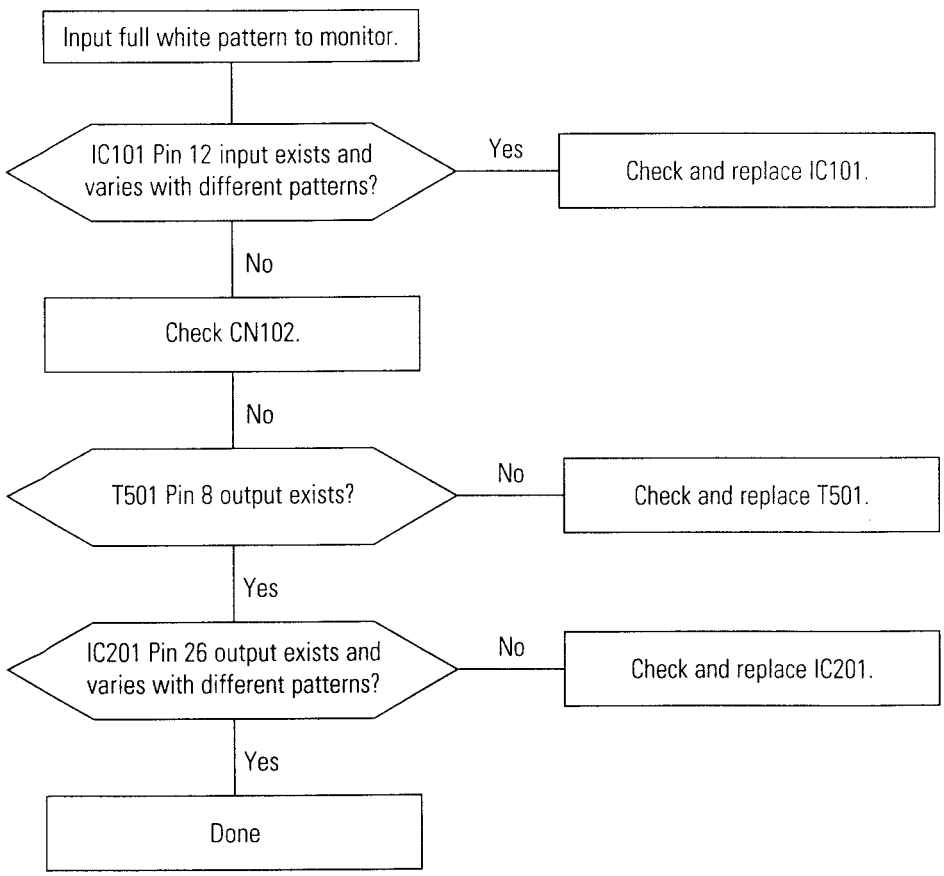
WAVEFORMS



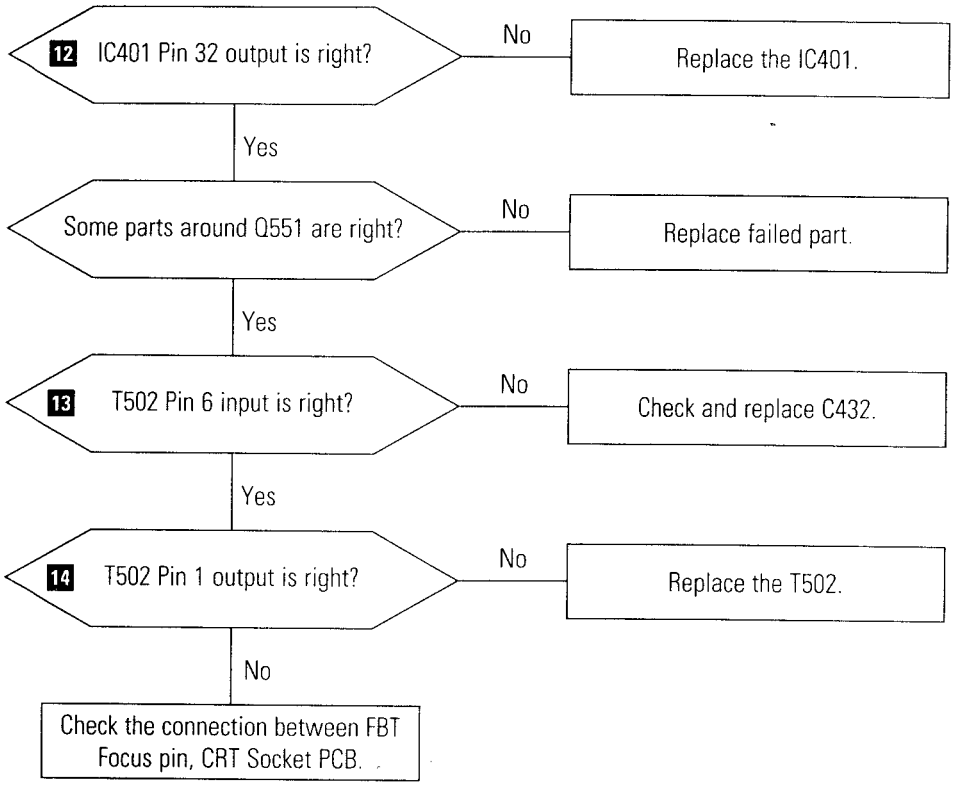




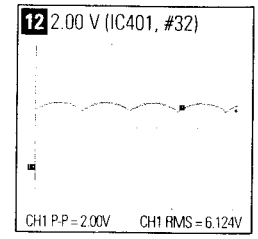
5-1-14 ABL Failure

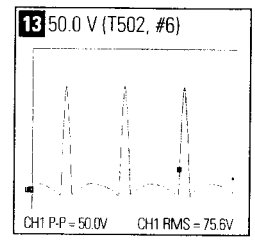


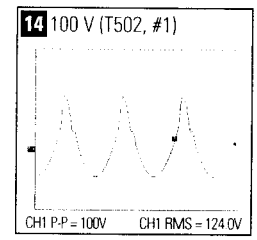
5-1-15 Dynamic Focus Failure



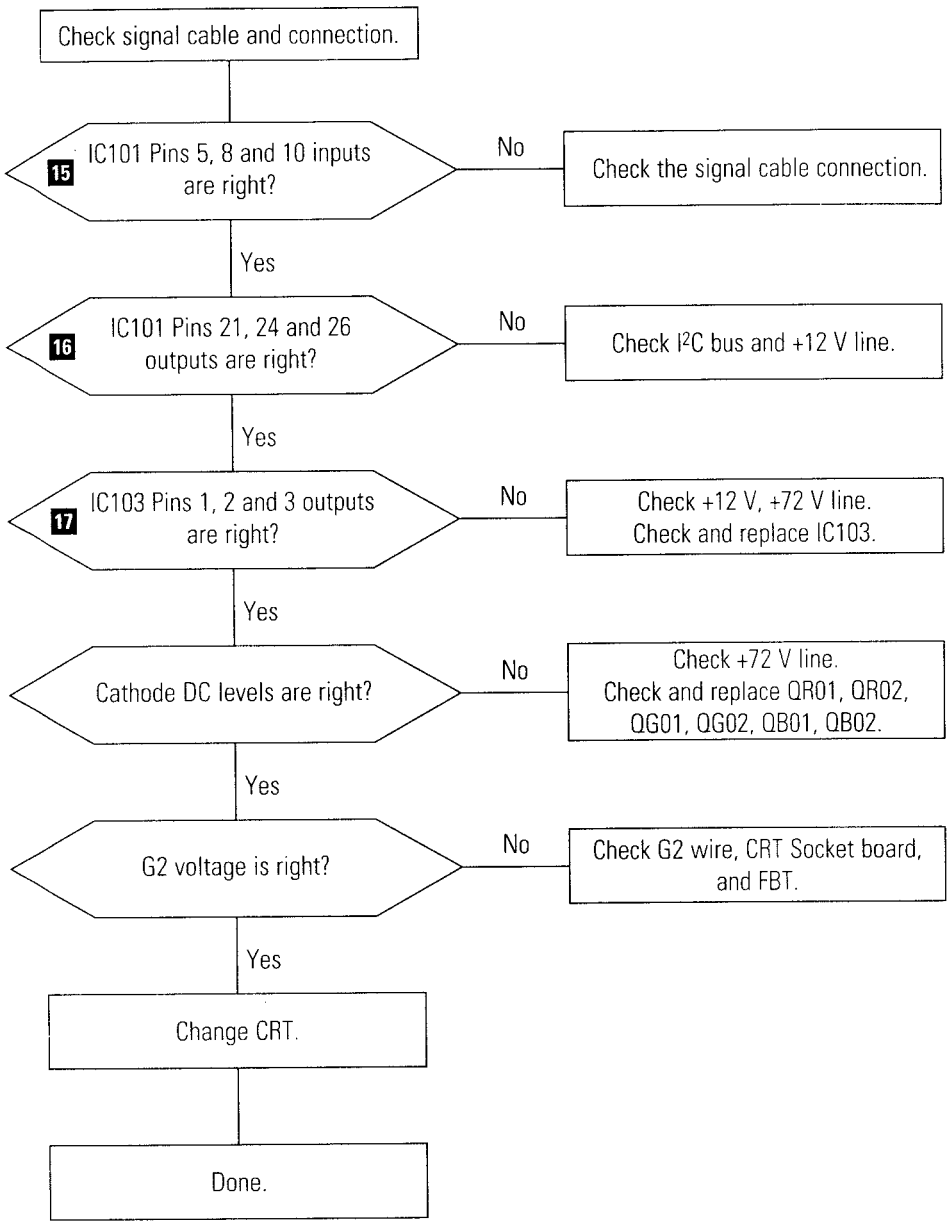
WAVEFORMS





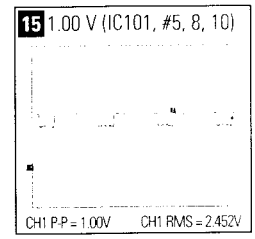


5-1-16 No Video

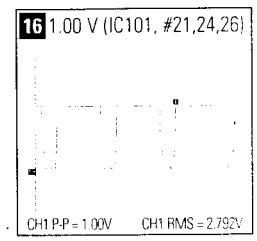

Check signal cable and connection.
15 IC101 Pins 5, 8 and 10 inputs are right?
No
Check the signal cable connection.
Yes
16 IC101 Pins 21, 24 and 26 outputs are right?
No
Check I²C bus and +12 V line.
Yes
17 IC103 Pins 1, 2 and 3 outputs are right?
No
Check +12 V, +72 V line.
Check and replace IC103.
Yes
Cathode DC levels are right?
No
Check +72 V line.
Check and replace QR01, QR02, QG01, QG02, QB01, QB02.
Yes
G2 voltage is right?
No
Check G2 wire, CRT Socket board, and FBT.
Yes
Change CRT.
Done.

WAVEFORMS

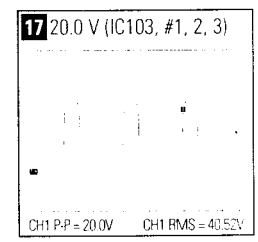
15 1.00 V (IC101, #5, 8, 10)



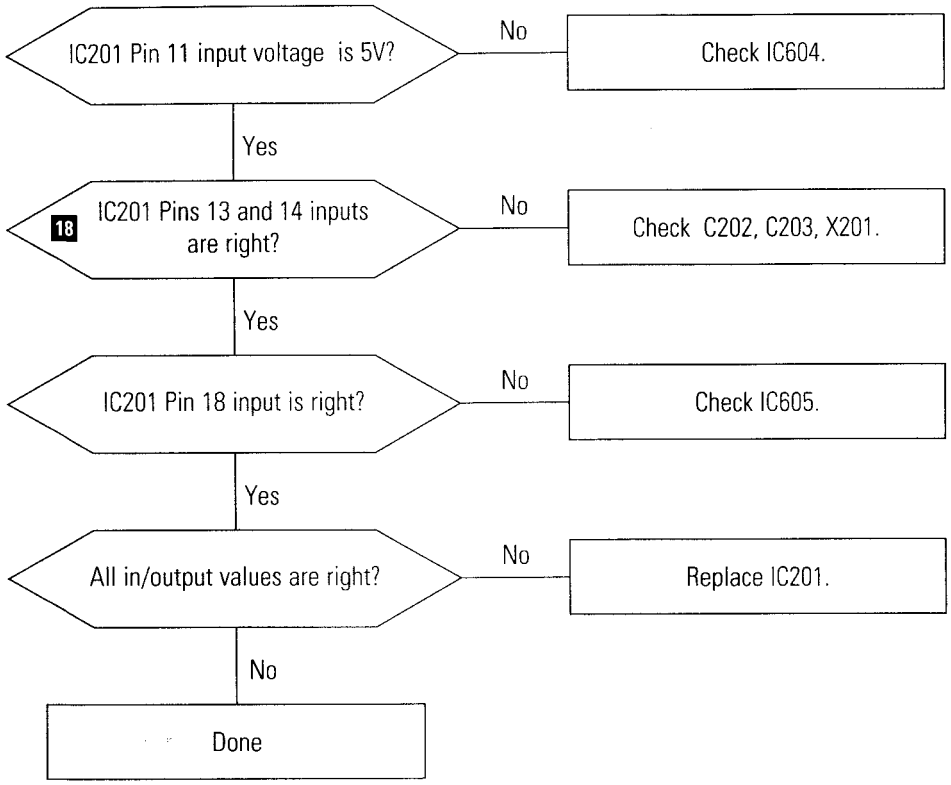
16 1.00 V (IC101, #21,24,26)



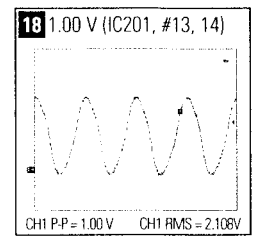
17 20.0 V (IC103, #1, 2, 3)



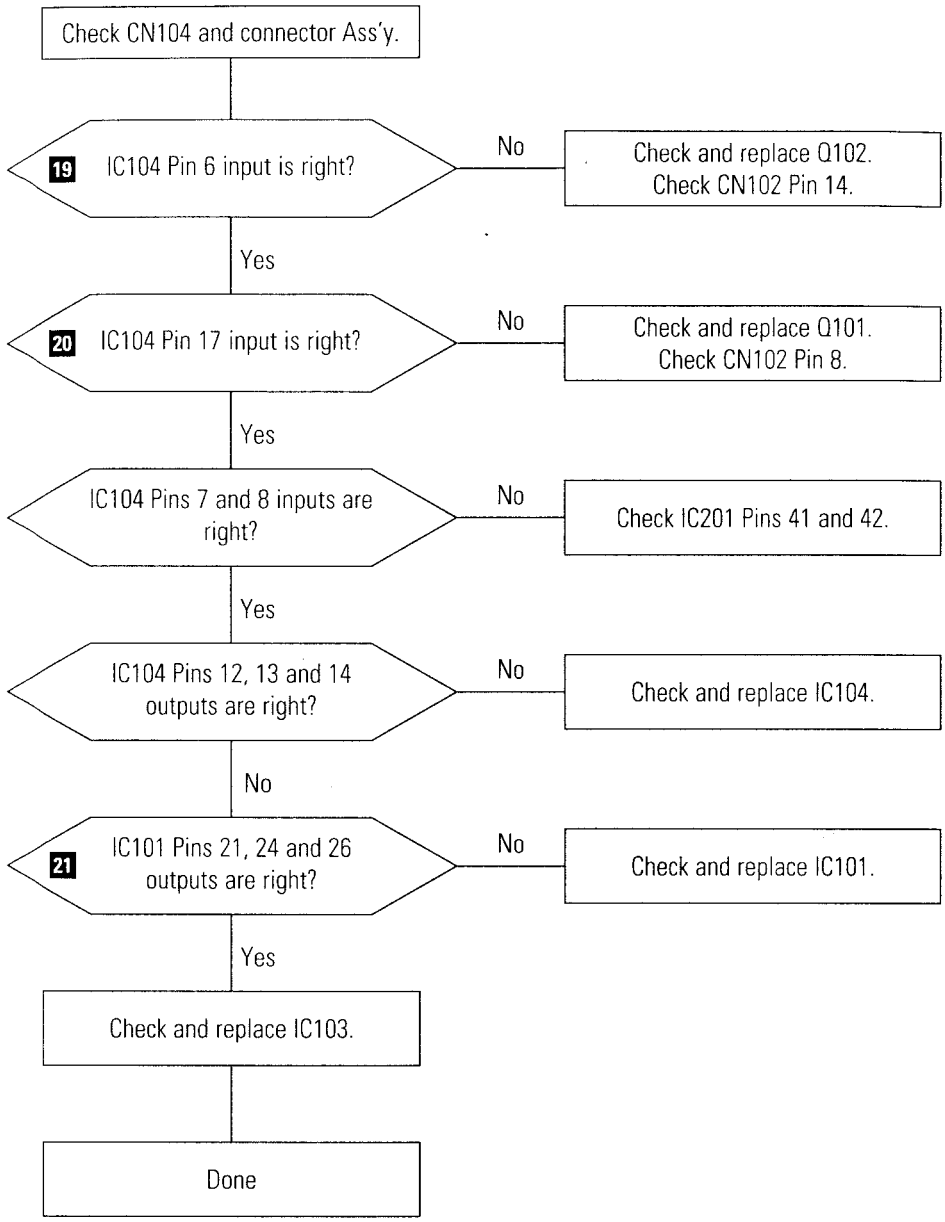
5-1-17 Micom Failure



WAVEFORMS

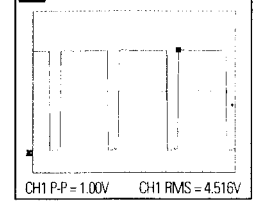


5-1-18 OSD Failure

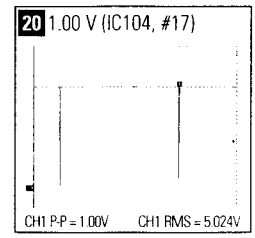


WAVEFORMS

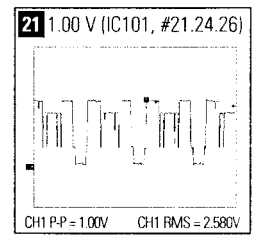
19 1.00 V (IC104, #6)



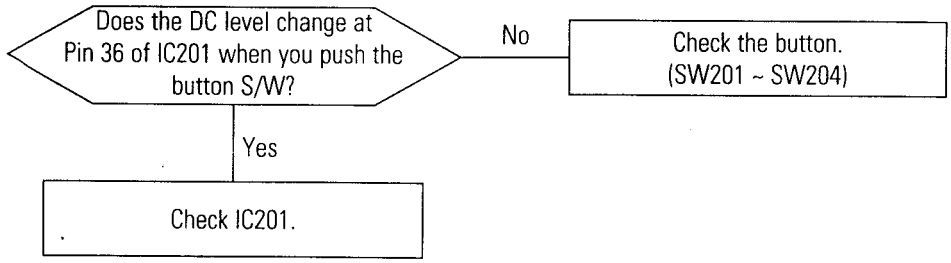
20 1.00 V (IC104, #17)



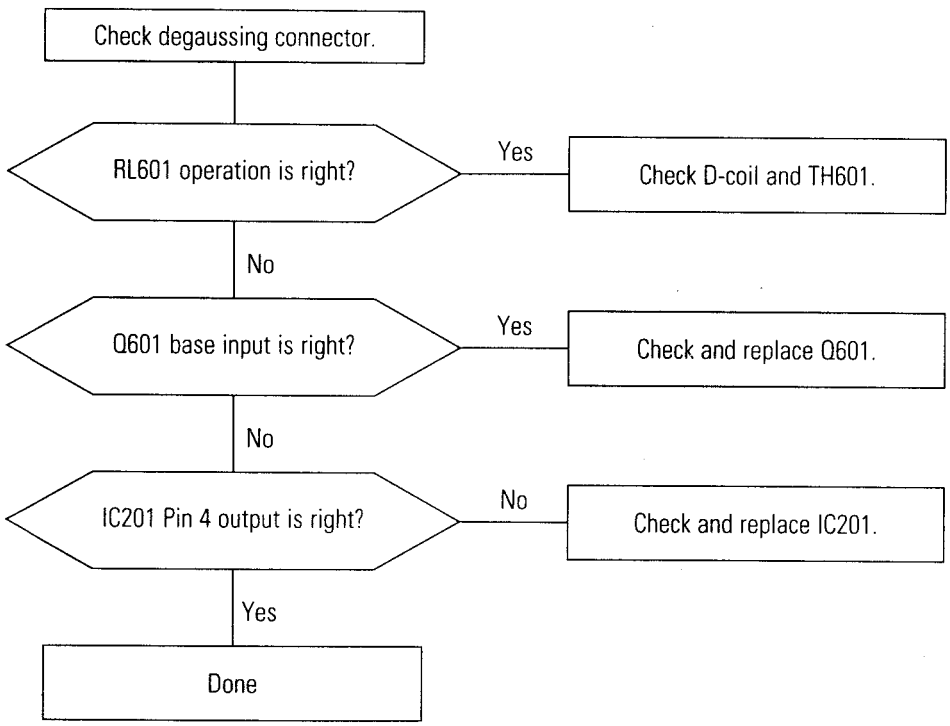
21 1.00 V (IC101, #21.24.26)



5-1-19 User Control Failure

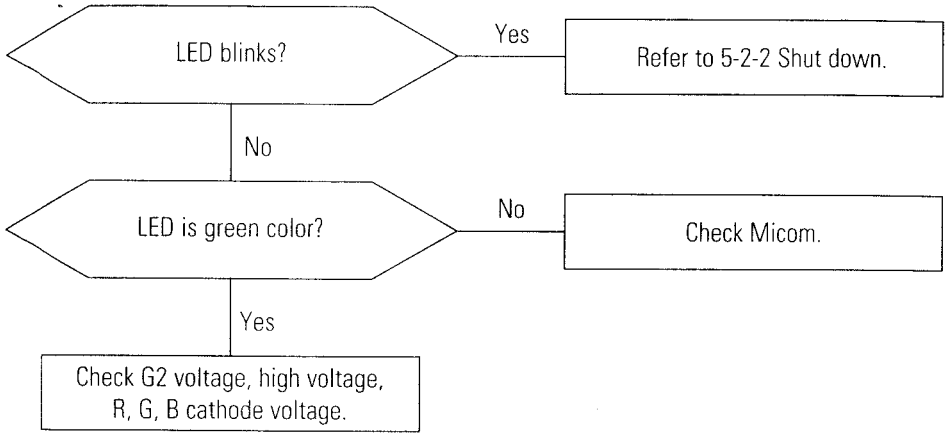


5-1-20 Degaussing Failure

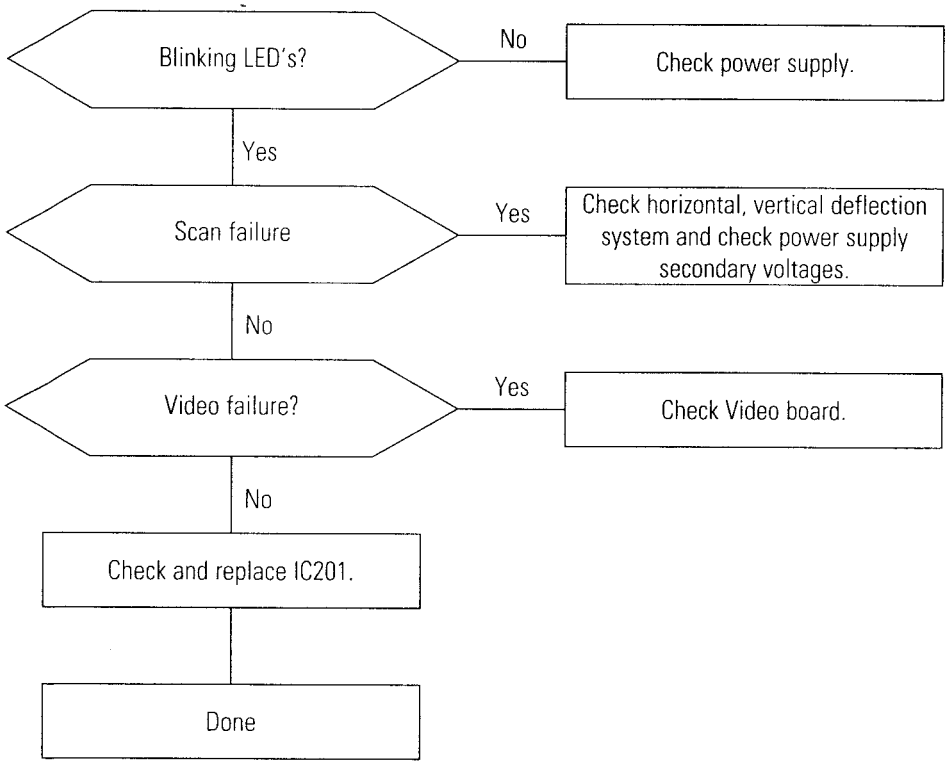


5-2 General Troubleshooting

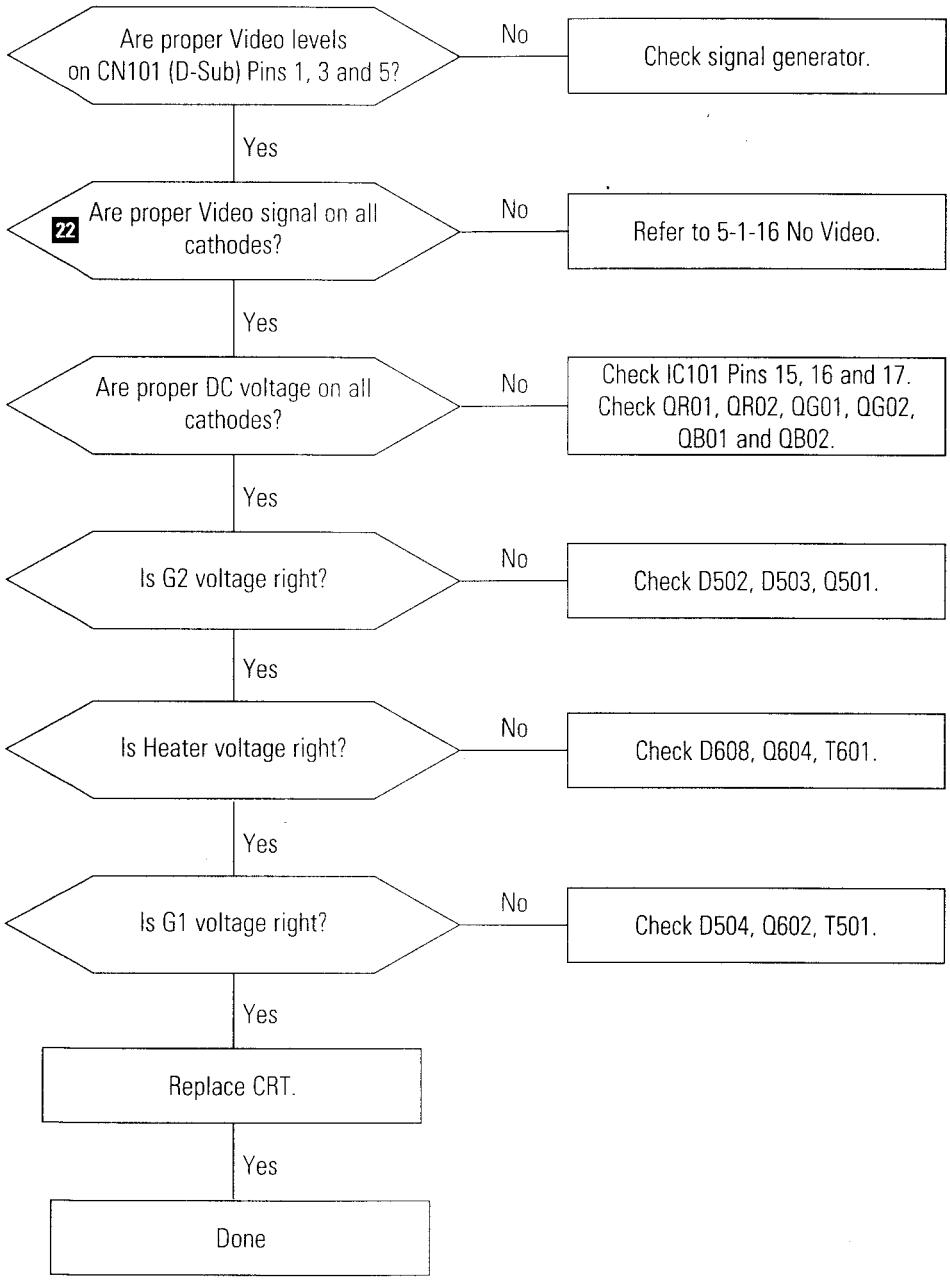
5-2-1 No Picture



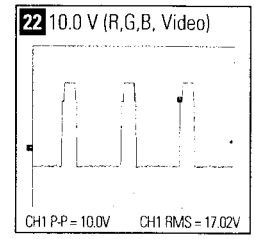
5-2-2 Shut Down



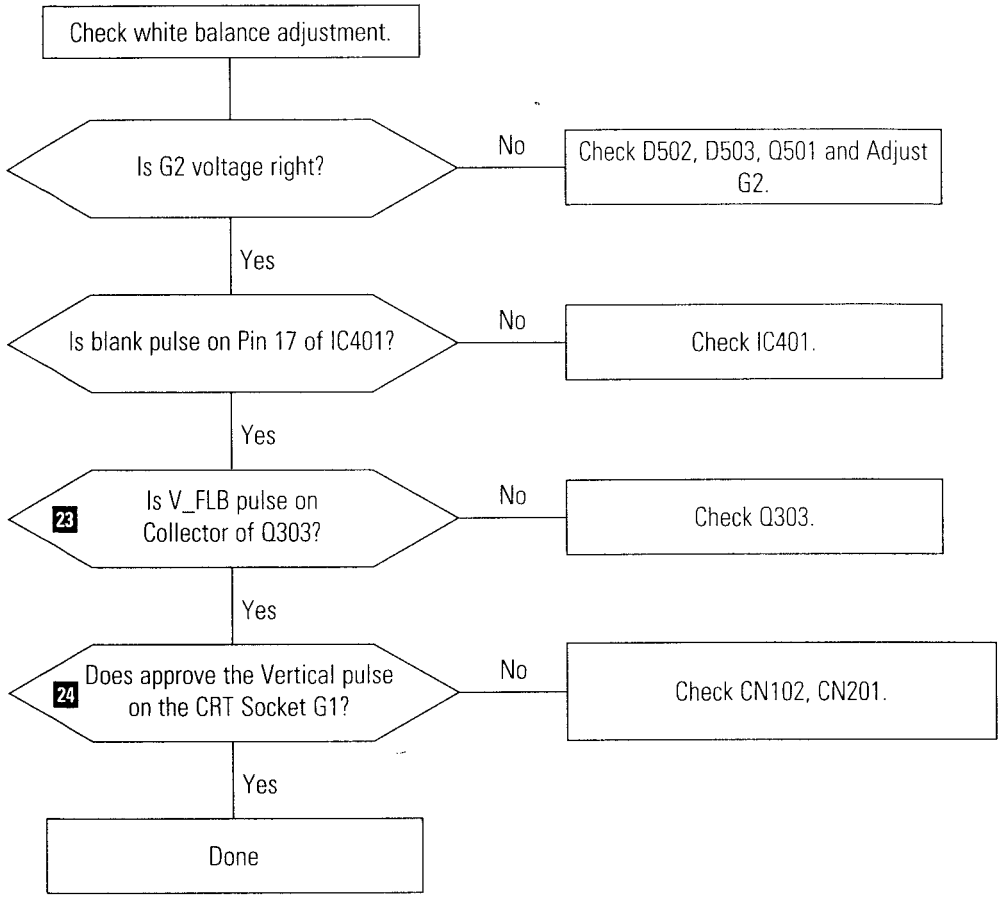
5-2-3 Missing Color



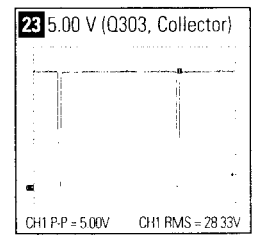
WAVEFORMS

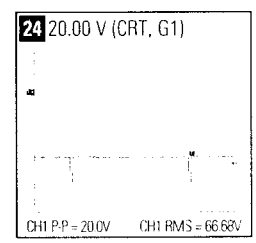


5-2-4 Visible Retrace

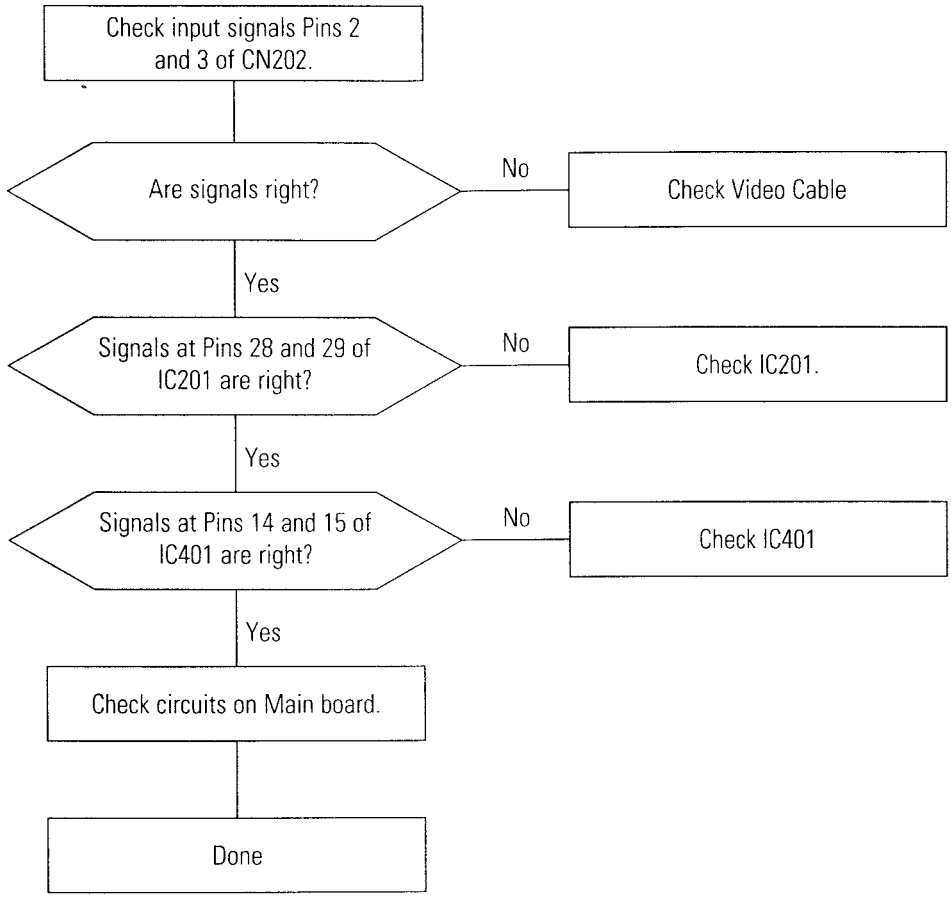


WAVEFORMS

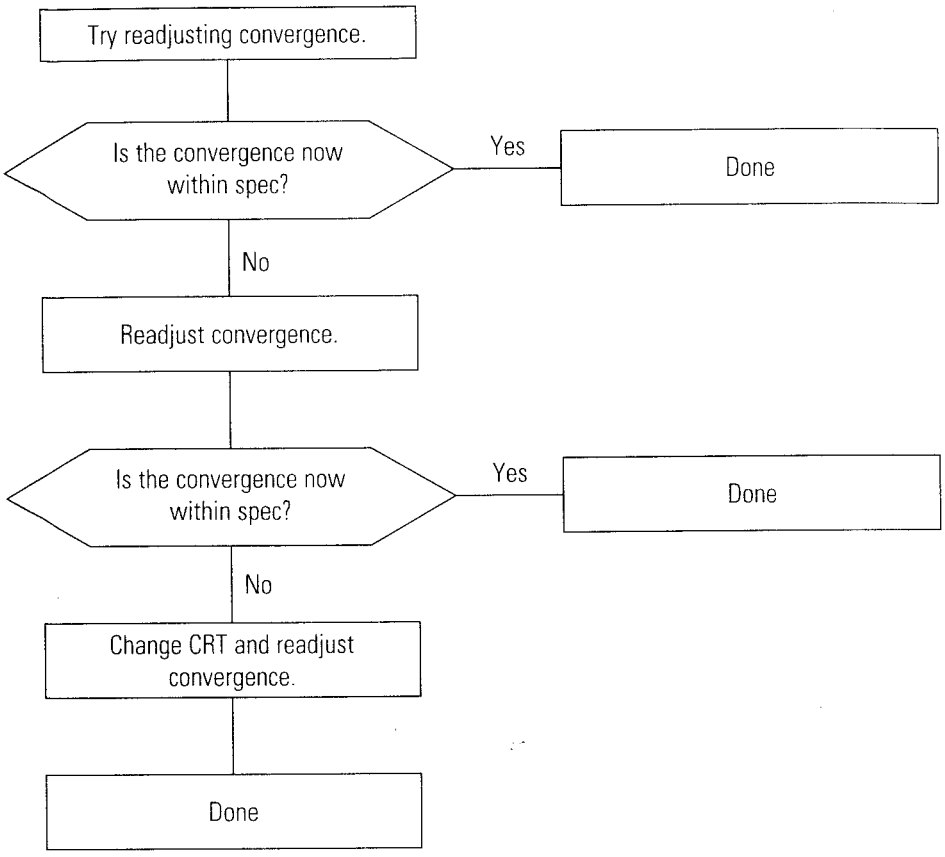




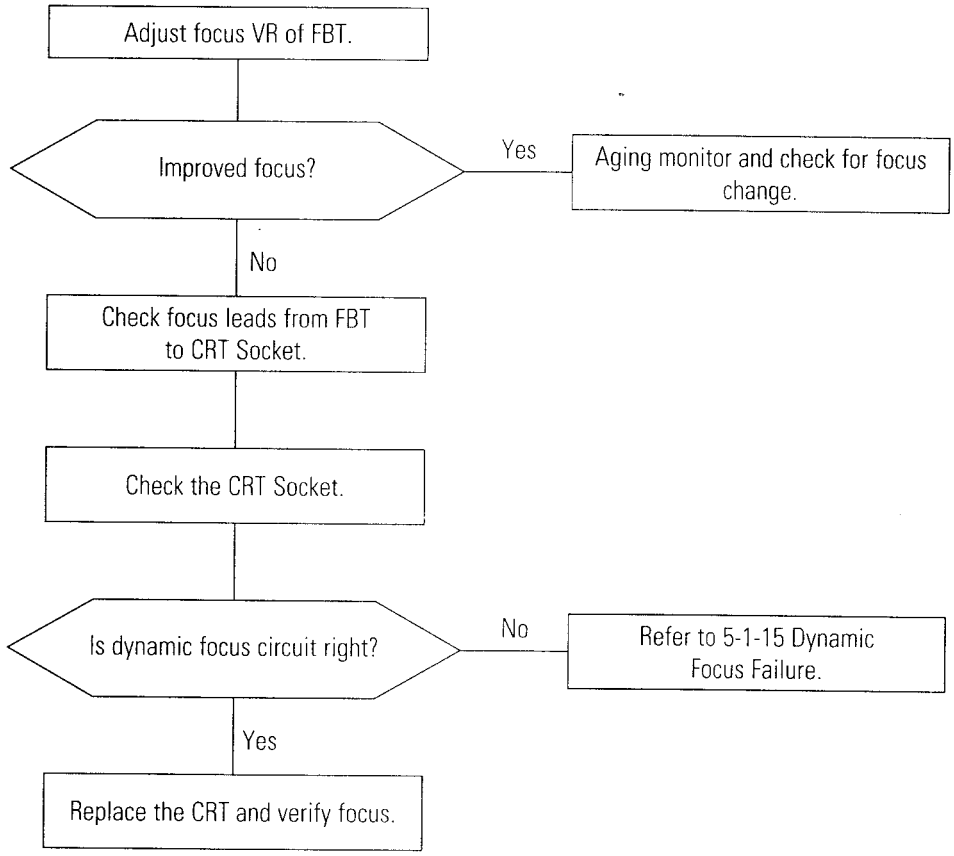
5-2-5 Unsynchronized Image



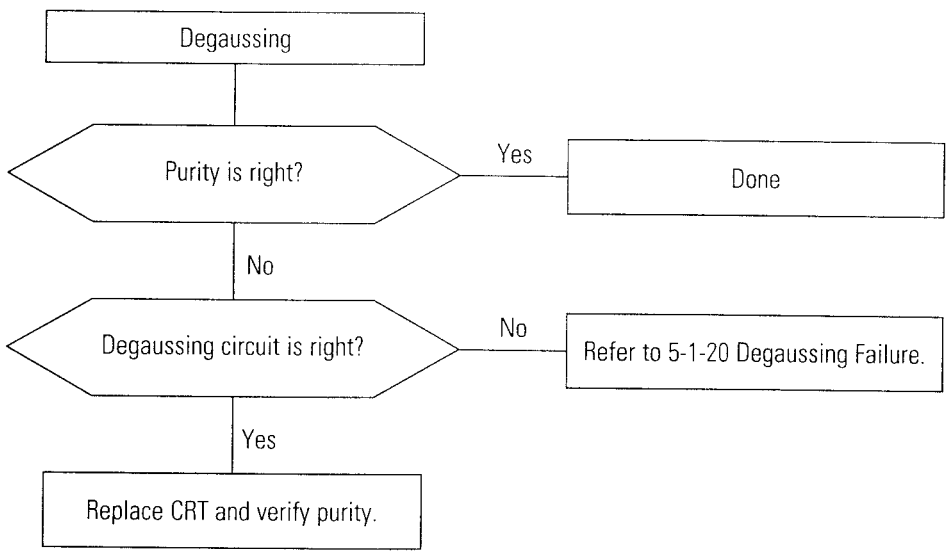
5-2-6 Misconvergence



5-2-7 Poor Focus

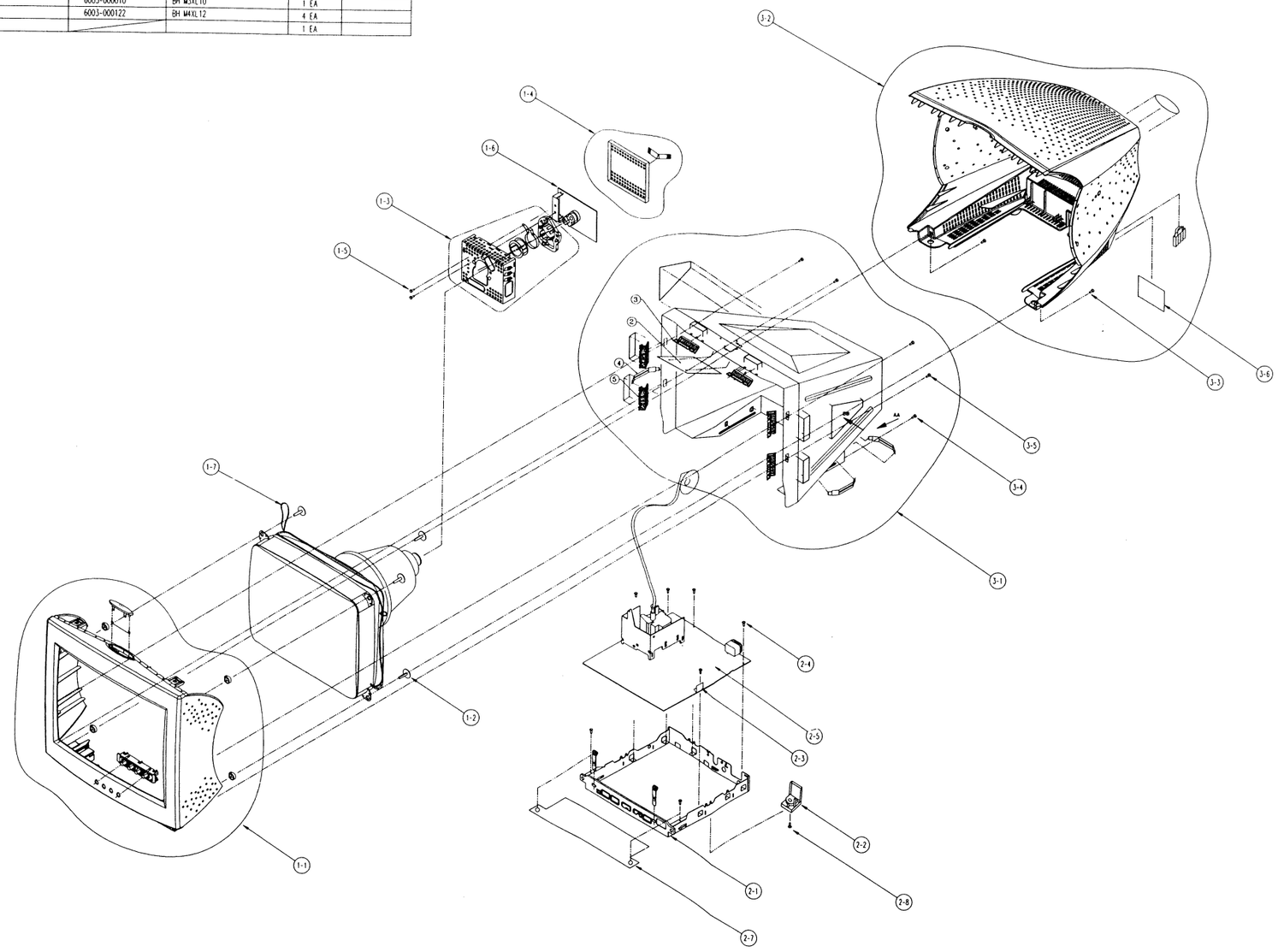


5-2-8 Purity Failure



6 Exploded View and Parts List

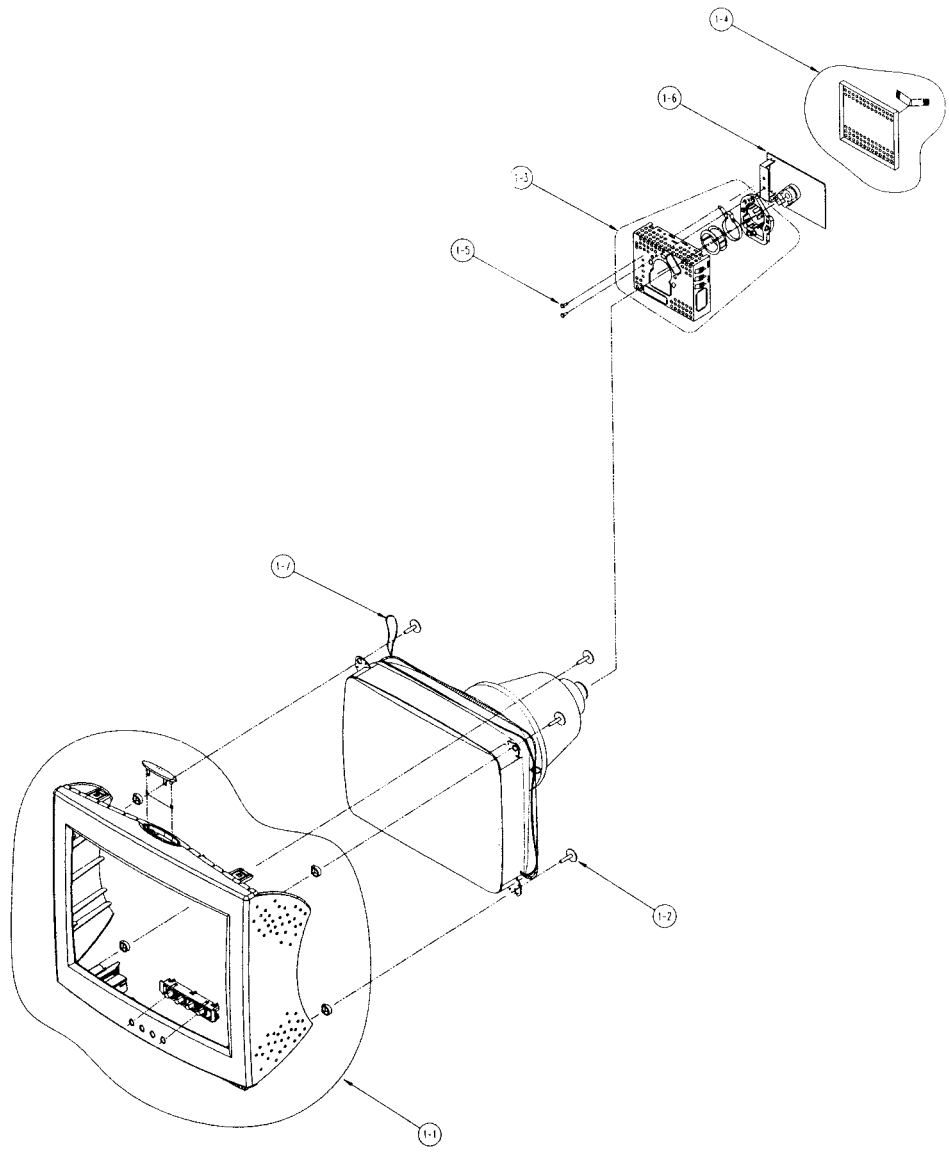
NO	DESCRIPTION	CODE-NO	SPECIFICATION	Q'TY	REMARK
1-1	UNIT/COVER-FRONT	BH75-00194A	TC17LS	1 EA	
1-2	SCREW-CRT/TAPTITE	6006-001010	M3*P,BH,+,D5,L25	4 EA	
1-3	UNIT/SHIELD-VIDEO	BH75-00033A	TP17LT	1 EA	
1-4	SHIELD/VIDEO-CAP	BH75-00047A	TP17LT	1 EA	
1-5	SCREW	6006-000010	BH M3XL10	2 EA	
1-6	VIDEO-PCB		TP17LT	1 EA	
1-7	D-COIL ASS'Y		TP17LT	1 EA	
2-1	UNIT/SHIELD-BOTTOM	BH75-00145A	TP17LT	1 EA	
2-2	COVER-SIGNAL	BH72-00126A	ABS HB TP02	1 EA	
2-3	COVER-PCB	BH72-00132A	PVC V0 T1.0 BLACK	1 EA	
2-4	SCREW	6006-000010	BH M3XL10	5 EA	
2-5	MAIN-PCB		TP17LT	1 EA	
2-6	SCREW	6003-001136	BH M4XL8	1 EA	
2-7	SHEET-LAF	BH72-00078A	AL+PC T0.5	1 EA	
2-8	SCREW	6003-000010	BH M3XL10	2 EA	
3-1	UNIT/SHIELD-COVER	BH75-00145A	TP17LT	1 EA	
3-2	UNIT/COVER-REAR	BH75-00195A	TC17LS	1 EA	
3-3	SCREW	6003-00009	BH M4XL16	2 EA	
3-4	SCREW	6003-000010	BH M3XL10	1 EA	
3-5	SCREW	6003-000122	BH M4XL12	4 EA	
3-6	LABEL RATING			1 EA	



6 Exploded View and Parts List

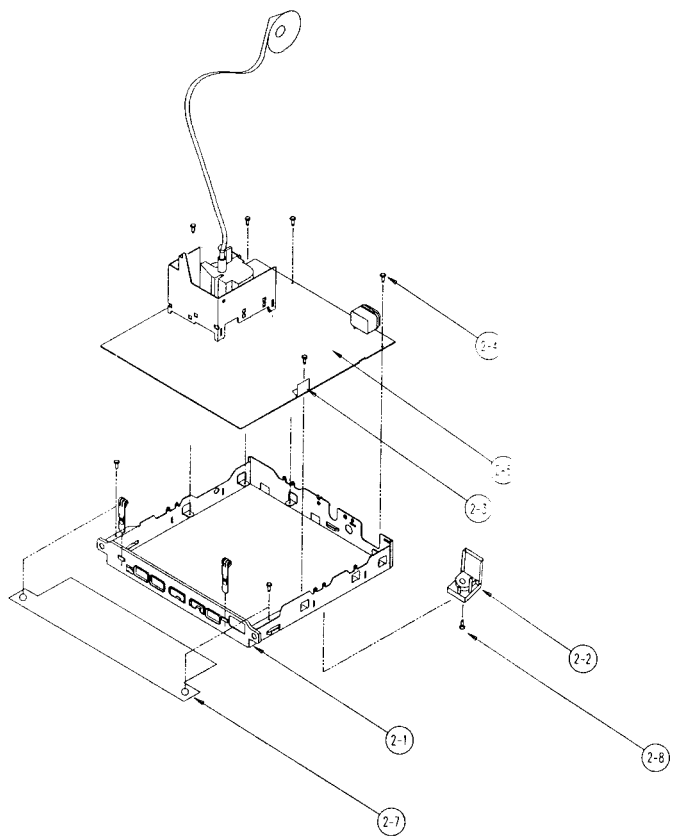
6-1 Front Cover & CRT Ass'y

NO	DESCRIPTION	CODE-NO	SPECIFICATION	Q'TY	REMARK
1-1	UNIT/COVER-FRONT	BH75-00194A	TC17LS	1 EA	
1-2	SCREW-CRT/TAPTITE	6006-001010	WPP,BH,+,D5,L25	4 EA	
1-3	UNIT/SHIELD-VIDEO	BH75-00033A	TP17LT	1 EA	
1-4	SHIELD/VIDEO-CAP	BH75-00047A	TP17LT	1 EA	
1-5	SCREW	6006-000010	BH M3XL10	2 EA	
1-6	VIDEO-PCB		TP17LT	1 EA	
1-7	D-COIL ASS'Y		TP17LT	1 EA	



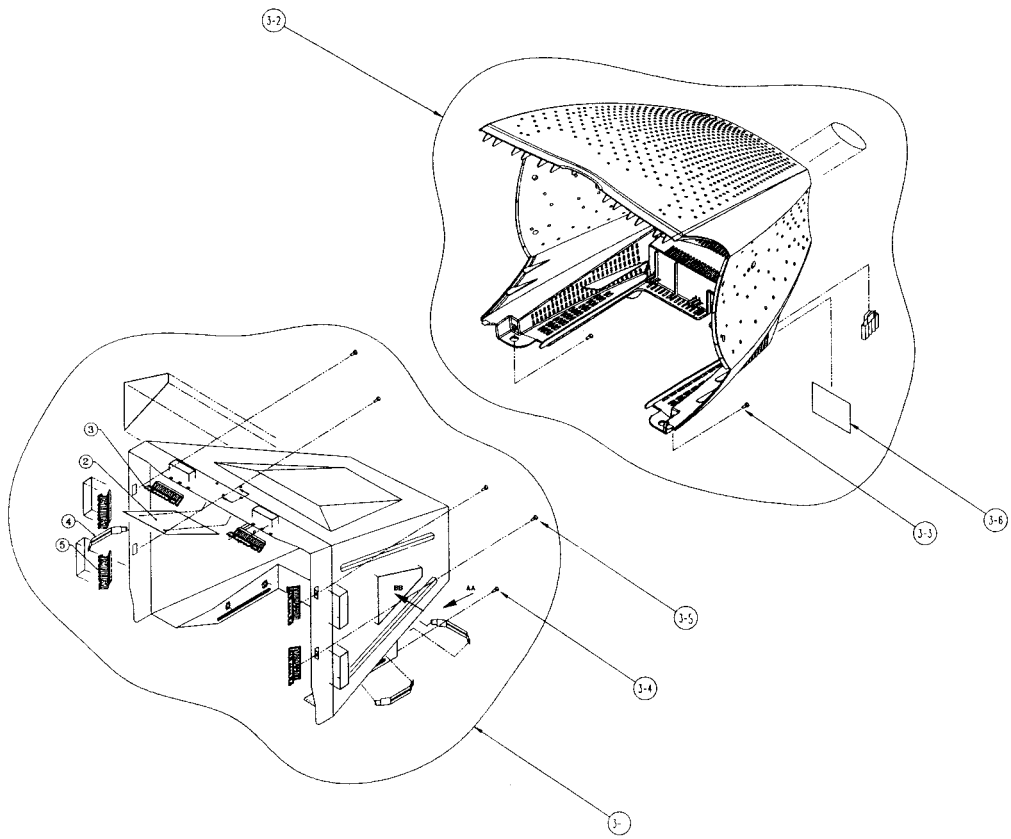
6-2 Chassis & Stand Ass'y

NO	DESCRIPTION	CODE-NO	SPECIFICATION	Q'TY	REMARK
2-1	UNIT/SHIELD-BOTTOM	BH75-00145A	TP17LT	1 EA	
2-2	COVER-SIGNAL	BH72-00126A	ABS HB TP02	1 EA	
2-3	COVER-PCB	BH72-00132A	PVC V0 T1.0 BLACK	1 EA	
2-4	SCREW	6006-000010	BH M3XL10	5 EA	
2-5	MAIN-PCB		TP17LT	1 EA	
2-6	SCREW	6003-001136	BH M4XL8	1 EA	
2-7	SHEET-LINE	BH72-00078A	AL+PC T0.5	1 EA	



6-3 Rear Cover Ass'y

NO	DESCRIPTION	CODE-NO	SPECIFICATION	Q'TY	REMARK
3-1	UNIT/SHIELD-COVER	BH75-00145A	TP17LT	1 EA	
3-2	UNIT/COVER-REAR	BH75-00195A	TC17LS	1 EA	
3-3	SCREW	6003-000909	BH M4XL16	2 EA	
3-4	SCREW	6003-000910	BH M3XL10	1 EA	
3-5	SCREW	6003-000122	BH M4XL12	4 EA	
3-6	LABEL RATING			1 EA	



7 Electrical Parts List

7-1 Main PCB Parts

Loc. No.	Code No.	Description	Specification	Remarks
-	BH98-00126F	ASSY PCB/MAIN	"TP17LS7TSY,TSED,CHINA,-"	
-	BH91-00064F	"PROCESS-S/W,TP17LT"	"TP17LT,-,-,-"	
B/PCB+SH/LMF	6003-000010	SCREW-TAPTITE	"BWH,+,B,M3,L10,ZPC(YEL),SWRCH1"	
C409	2306-000147	"C-FILM,MPPF"	"1uF,5%,250V,BK,26x24x15,22.5mm"	
C420	2301-001306	"C-FILM,PPF"	"2.5NF,3%,1.6KV,TP,21.5X15.5X8.5MM,7.5"	
C430	2306-000249	"C-FILM,MPPF"	"680nF,5%,250V,TP,26x20.5x12.20"	
C512	2201-000020	"C-CERAMIC,DISC"	"10nF,10%,1kV,Y5P,BK,18x5,10"	
C601	2301-001195	"C-FILM,MPPF"	"150nF,10%,275VAC,BK,26x16.5x7,"	
C602	2301-001195	"C-FILM,MPPF"	"150nF,10%,275VAC,BK,26x16.5x7,"	
C608	2401-003392	C-AL	"180uF,20%,450V,GP,BK,25x45,10"	
CIS	BH39-00016A	CBF-SIGNAL	"-,1550MM,-,IVORY(IV01),2990,-"	
CIS	BH68-00001A	LABEL/MARK-CDT	"ART-PAPER 100G,-,WHT,BLK,-,ALL,CDT"	
CIS	BH72-00078A	SHEET-LMF	"DP17L,AL+PC,-,-,0.5,-"	
CIS	BH72-00132A	COVER-PCB	"TARANSPARENT,ABS+PC,5V,IV16,T2.0,-"	
CIS	BH73-60304C	RUBBER-SUPPORT	"DP15LT,CR V0,GRAY,-,14*7*10,-,-"	
CIS	BH75-00031A	UNIT/SHIELD-BOTTOM	"CDB7907,SECC ,-,-,-"	
CIS	BH71-00002A	EARTH-PLATE/FRONT	"CDB7907,STS 301,T0.15,-,-"	
CIS	BH71-00008A	SHIELD-BOTTOM	"CDA4507,SECC ,T1.0,-,-"	
CIS	BH46-00001F	"MICOM-S/W,TP17LT"	"TRANSPARENT,-,-"	
CN1	3711-000012	CONNECTOR-HEADER	"BOX,4P,1R,2.5mm,STRAIGHT,SN"	
CN2	BH39-00131A	CBF-HARNESS	"2P,80MM,BLU/WHT/YEL,UL1007,AWG26,SMP250-02/YBNH200-02"	
CN201	3711-003895	CONNECTOR-HEADER	"BOX,13P,1R,2mm,STRAIGHT,SN"	
CN202	3711-003873	CONNECTOR-HEADER	"BOX,7P,1R,2mm,STRAIGHT,SN"	
CN403	3711-003989	CONNECTOR-HEADER	"NOWALL,4P,1R,8mm,STRAIGHT,SN"	
CN501+G2Y	BH39-00014A	CBF-HARNESS	"1P,280MM,RED,UL1032,AWG22,YFH800-1,BS201R"	
CN601	3721-001028	PLUG-AC POWER	"3P,-,-,NI"	
CN651M	3722-001159	JACK-DC POWER	"3P/2C,2.47mm,NI,BLK,NO"	
D406	0402-000178	DIODE-RECTIFIER	"3TH41A,1.5KV,3A,DO-201AD,BK"	
D409	0402-001256	DIODE-RECTIFIER	"SUF30JL,600V,3A,P600,BK"	
D601	0402-000103	DIODE-BRIDGE	"D2SBA60,600V,1.5A,SIP-4,ST"	
D609	0402-000005	DIODE-RECTIFIER	"31DF4,400V,3A,DO-201AD,BK"	
D651M	0402-000005	DIODE-RECTIFIER	"31DF4,400V,3A,DO-201AD,BK"	
F651	3601-000103	FUSE-AXIAL LEAD	"125V,1.5A,FAST-ACTING,CERAMIC,2.4x7.1mm"	
FUSE	3601-000004	FUSE-CARTRIDGE	"250V,3.15A,SLOW-BLOW,CERAMIC,5x20mm"	
HS501	6502-000001	CABLE CLAMP	"DAWH-5NB,D15,L35,NTR,NYLON66"	
IC201	0903-001143	IC-MICROCONTROLLER	"88P6232,8BITBit,SDIP,42P,600MIL,12MHz,ST,CMOS,PLASTIC,5V,-,-40to+85C,464BYTE,32K"	
IC201_SOCK	3704-001071	SOCKET-IC	"42P,DIP,SN,1.778mm"	
IC401	1204-001509	IC-HOR./VER.PROCESSO	"TDA4859,DIP,32P,400MIL,PLASTIC,16V,-,-20TO+70CC,ST,H/V DEF. PROCESSOR"	
IC602	1203-000165	IC-POSI.ADJUST REG.	"78R12,TO-220,3P,-,-,12V,-,0to+"	
IC604	1203-000001	IC-POSI.FIXED REG.	"7805,TO-220,3P,-,PLASTIC,4.8/5"	
JP72	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP83	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
L401	BH27-20345B	COIL-CHOKE		
L402	BH27-00023A	COIL-CHOKE	"120UH,+/-10%,DR1523(L-81,C:9.8),BK,-,-"	

Loc. No.	Code No.	Description	Specification	Remarks
L403	BH27-20342U	COIL-CHOKE	"7.1MH,10%,DR8*11,BULK,-,-"	
L601	BH27-00007A	COIL-LINE FILTER	"25MH MIN,-,SQE 2424,BULK,-,-"	
LJP6M	BH39-40305Y	CBF-HARNESS	",110MM,BLK,1015,AWG22,-,-,-,-,"	
M/PCB+B/PCB	6003-000010	SCREW-TAPTITE	"BWH,+,B,M3,L10,ZPC(YEL),SWRCH1"	
Q409	0505-001391	FET-SILICON	"IRF630M,N,200V,9A,0.4ohm,75W,TO-220"	
Q410	0505-001391	FET-SILICON	"IRF630M,N,200V,9A,0.4ohm,75W,TO-220"	
Q652M	0502-000249	TR-POWER	"KSB772-Y,PNP,10W,TO-126,-,160-"	
R417	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R421	2001-000245	R-CARBON	"1.5OHM,5%,1/2W,AA,TP,3.3X9MM"	
R516	2002-001063	R-COMPOSITION	"160Kohm,2%,1/2W,AA,TP,3.9x9mm"	
R527	2001-000864	R-CARBON	"56KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R653M	2001-000042	R-CARBON	"1KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
RL601	3501-001111	RELAY-POWER	"12Vdc,250mW,5A,1FormA,15mS,5mS"	
SW401	3406-000002	SWITCH-ROTARY	"36Vdc,200mA,SP3T,-"	
T401	BH26-00027A	TRANS-HOR.DRIVE	"35.0MH,-,EI 1916,PL-3,-,310UH,-"	
T402	BH26-00028A	TRANS-H.LINEARITY	"5.2UH,6P,DR1425(C:5.0),YL-81,5.2UH/68.0MH,-,HL-1425E"	
T501	BH26-00035A	TRANS-FBT	"1.0MH,13P,FUR3658,HV45,-,-,FM1059,FEA831"	
T502	BH26-00022A	TRANS-FOCUS	"3.0MH,6P,EI 2218,SB-5S,3.0MH/470MH,25.0UH,EI-2218H"	
T601	BH26-00034A	TRANS-POWER	"-,-,EER 3942,PL3,PM2,390UH,6.0UH,-"	
T602	BH26-30302S	TRANS-SYNC.	"3-1(250UH),-,-,SB-5S,UU1116,3-"	
TH601	1404-000002	THERMISTOR-PTC	"9ohm,20%,-,-,TR,RECT,-"	
TH602	1404-001020	THERMISTOR-NTC	"8ohm,15%,-,17mW/C,BK"	
VIDEO+MAIN GND	BH39-00024A	CBF-HARNESS	"-,200MM,BLK,UL1015,AWG18,35068-9822"	
-	BH91-00079A	ASSY MAIN/AUTO-SN	"TP17LT-07A1/4141,-,SN/TN,-"	
BD301	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD401	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD402	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD601	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD602	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD603	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
C201	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C202	2201-000389	"C-CERAMIC,DISC"	"0.022nF,5%,50V,NP0,TP,5x3,5"	
C203	2201-000389	"C-CERAMIC,DISC"	"0.022nF,5%,50V,NP0,TP,5x3,5"	
C204	2401-002075	C-AL	"4.7uF,20%,50V,GP,TP,5x11,5"	
C205	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C206	2401-000050	C-AL	"10uF,20%,16V,GP,TP,5x11,2.5"	
C207	2401-002075	C-AL	"4.7uF,20%,50V,GP,TP,5x11,5"	
C209	2401-002075	C-AL	"4.7uF,20%,50V,GP,TP,5x11,5"	
C210	2401-002075	C-AL	"4.7uF,20%,50V,GP,TP,5x11,5"	
C211	2201-000146	"C-CERAMIC,DISC"	"0.1nF,5%,50V,SL,TP,5x3.5,5"	
C212	2201-000017	"C-CERAMIC,DISC"	"1nF,10%,50V,Y5P,TP,5x3.5,5"	
C213	2401-000029	C-AL	"10uF,20%,100V,GP,TP,6.3x11,5"	
C214	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C215	2201-000146	"C-CERAMIC,DISC"	"0.1nF,5%,50V,SL,TP,5x3.5,5"	

Loc. No.	Code No.	Description	Specification	Remarks
C216	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C217	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C220	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C221	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C222	2401-000050	C-AL	"10uF,20%,16V,GP,TP,5x11,2.5"	
C301	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
C302	2305-001041	"C-FILM,MPEF"	"220nF,5%,63V,TP,7.5x4.5x13.5,5"	
C305	2401-000037	C-AL	"470uF,20%,16V,GP,TP,8x11.5,5"	
C306	2401-000856	C-AL	"220uF,20%,35V,WT,TP,10x20,5"	
C307	2305-000237	"C-FILM,MPEF"	"1uF,5%,63V,TP,7.5x15.5mm,5mm"	
C308	2301-000013	"C-FILM,PEF"	"4.7nF,5%,100V,TP,10.5x12.5x6.5"	
C309	2202-002008	"C-CERAMIC,MLC-AXIAL"	"10nF,+80-20%,50V,Y5V,TP,2.3X3."	
C311	2301-001027	"C-FILM,PEF"	"15nF,10%,250V,TP,9.5x12x4.5,5m"	
C312	2401-001016	C-AL	"3.3UF,20%,50V,BP,TP,5X11,5"	
C401	2301-000312	"C-FILM,PEF"	"8.2nF,5%,100V,TP,6x12.5mm,5mm"	
C402	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
C403	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C404	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C405	2201-000823	"C-CERAMIC,DISC"	"0.27nF,5%,50V,SL,TP,8x3.5,5"	
C406	2301-000519	"C-FILM,PEF"	"3.3nF,5%,100V,TP,5.8x3x12.5,5m"	
C407	2401-000540	C-AL	"150uF,20%,63V,LZ,TP,10x25,5"	
C408	2201-000469	"C-CERAMIC,DISC"	"0.33nF,10%,500V,Y5P,TP,5.5x3,5"	
C410	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C411	2301-000005	"C-FILM,PEF"	"33nF,5%,100V,TP,5.8x12.5x3,5"	
C412	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C413	2401-001012	C-AL	"3.3UF,20%,50V,BP,TP,16X25,7.5"	
C414	2401-001334	C-AL	"470nF,20%,50V,GP,TP,5x11,2.5"	
C415	2401-001218	C-AL	"4.7uF,20%,100V,WT,TP,5x11,5"	
C416	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
C417	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C419	2301-001305	"C-FILM,PPF"	"2.2NF,3%,1.6KV,TP,22X15.5X8.5MM,7.5"	
C421	2303-001029	"C-FILM,PPF"	"5.2nF,5%,630V,TP,19x7x13,7.5"	
C423	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C425	2306-000119	"C-FILM,MPPF"	"100nF,5%,250V,TP,19x14.5x6.5,7"	
C426	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C427	2306-000164	"C-FILM,MPPF"	"220nF,5%,250V,TP,19x22x10,7.5m"	
C429	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C431	2306-000179	"C-FILM,MPPF"	"300nF,5%,250V,TP,20x18.5x10.5,"	
C432	2305-001033	"C-FILM,MPEF"	"15nF,10%,250V,TP,13X9.0X4.5mm,"	
C433	2305-001003	"C-FILM,MPEF"	"10nF,5%,250V,TP,13x4.5x9mm,7.5"	
C434	2401-001016	C-AL	"3.3UF,20%,50V,BP,TP,5X11,5"	
C435	2201-000469	"C-CERAMIC,DISC"	"0.33nF,10%,500V,Y5P,TP,5.5x3,5"	
C501	2301-000016	"C-FILM,PEF"	"22nF,5%,100V,TP,7.2x4.5x9.0mm,"	

Loc. No.	Code No.	Description	Specification	Remarks
C502	2301-000016	"C-FILM,PEF"	"22nF,5%,100V,TP,7.2x4.5x9.0mm,"	
C503	2401-000050	C-AL	"10uF,20%,16V,GP,TP,5x11,2.5"	
C504	2301-000004	"C-FILM,PEF"	"2.2nF,5%,100V,TP,5.5X10X2.9,5m"	
C505	2401-000059	C-AL	"220nF,20%,50V,GP,-,5x11,5"	
C507	2201-000291	"C-CERAMIC,DISC"	"1nF,10%,500V,Y5P,TP,7.5x3.5,5"	
C508	2401-002267	C-AL	"2.2uF,20%,250V,GP,TP,8x11.5,5"	
C509	2401-002267	C-AL	"2.2uF,20%,250V,GP,TP,8x11.5,5"	
C510	2301-000005	"C-FILM,PEF"	"33nF,5%,100V,TP,5.8x12.5x3,5"	
C511	2301-000519	"C-FILM,PEF"	"3.3nF,5%,100V,TP,5.8x3x12.5,5m"	
C513	2201-000291	"C-CERAMIC,DISC"	"1nF,10%,500V,Y5P,TP,7.5x3.5,5"	
C514	2401-001334	C-AL	"470nF,20%,50V,GP,TP,5x11,2.5"	
C515	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C551	2401-000050	C-AL	"10uF,20%,16V,GP,TP,5x11,2.5"	
C552	2201-000132	"C-CERAMIC,DISC"	"0.1nF,10%,500V,Y5P,TP,6.5x3,5"	
C603	2201-000023	"C-CERAMIC,DISC"	"2.2nF,20%,125V,Y5U,TP,11x7,5"	
C604	2201-000023	"C-CERAMIC,DISC"	"2.2nF,20%,125V,Y5U,TP,11x7,5"	
C605	2305-001041	"C-FILM,MPEF"	"220nF,5%,63V,TP,7.5x4.5x13.5,5"	
C607	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C609	2401-000971	C-AL	"22uF,20%,50V,WT,TP,6x11mm,5mm"	
C610	2301-000284	"C-FILM,PEF"	"47nF,5%,100V,TP,8.5x12.5mm,5mm"	
C611	2401-000613	C-AL	"1uF,20%,50V,WT,TP,5x11,5"	
C612	2401-000613	C-AL	"1uF,20%,50V,WT,TP,5x11,5"	
C613	2201-000012	"C-CERAMIC,DISC"	"0.22nF,10%,1kV,Y5P,TP,6.3x5,5"	
C614	2201-000019	"C-CERAMIC,DISC"	"10nF,+80-20%,500V,Y5V,TP,13.5x4mm,5"	
C615	2201-000291	"C-CERAMIC,DISC"	"1nF,10%,500V,Y5P,TP,7.5x3.5,5"	
C616	2201-000023	"C-CERAMIC,DISC"	"2.2nF,20%,125V,Y5U,TP,11x7,5"	
C617	2201-000023	"C-CERAMIC,DISC"	"2.2nF,20%,125V,Y5U,TP,11x7,5"	
C618	2401-000039	C-AL	"1000uF,20%,16V,GP,TP,10x16,5"	
C619	2201-000469	"C-CERAMIC,DISC"	"0.33nF,10%,500V,Y5P,TP,5.5x3,5"	
C620	2401-000540	C-AL	"150uF,20%,63V,LZ,TP,10x25,5"	
C621	2401-001551	C-AL	"47uF,20%,35V,GP,TP,6.3x11,5"	
C622	2401-000703	C-AL	"2200uF,20%,25V,GP,-,12.5x25mm,"	
C623	2401-000039	C-AL	"1000uF,20%,16V,GP,TP,10x16,5"	
C626	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C627	2401-000292	C-AL	"100uF,20%,16V,WT,TP,8x11.5mm,5"	
C630	2401-001561	C-AL	"47uF,20%,35V,WT,TP,8x11.5,5"	
C631	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C651M	2401-000164	C-AL	"1000uF,20%,25V,WT,TP,12.5x20,5"	
C652M	2202-002008	"C-CERAMIC,MLC-AXIAL"	"10nF,+80-20%,50V,Y5V,TP,2.3X3."	
CN304	3711-000197	CONNECTOR-HEADER	"1WALL,3P,1R,2.5mm,STRAIGHT,SN"	
CN501	BH71-40300A	PIN-HINGE	"-,BRASS,D2.36,SN,HEAT/SINK"	
CN603	3711-000217	CONNECTOR-HEADER	"1WALL,3P,1R,3.96mm,STRAIGHT,SN"	
D301	0402-000274	DIODE-RECTIFIER	"UF4004,400V,1A,DO-41,TP"	

Loc. No.	Code No.	Description	Specification	Remarks
D401	0402-000274	DIODE-RECTIFIER	"UF4004,400V,1A,DO-41,TP"	
D402	0402-000006	DIODE-RECTIFIER	"1N4007GP,1000V,1A,DO-41,TP"	
D403	0402-000006	DIODE-RECTIFIER	"1N4007GP,1000V,1A,DO-41,TP"	
D404	0402-000006	DIODE-RECTIFIER	"1N4007GP,1000V,1A,DO-41,TP"	
D405	0402-000274	DIODE-RECTIFIER	"UF4004,400V,1A,DO-41,TP"	
D407	0402-001118	DIODE-RECTIFIER	"UF1G,400V,1.2A,DO-204AL,TP"	
D410	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D411	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D412	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D413	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D420	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D421	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D422	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D501	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D502	0402-000012	DIODE-RECTIFIER	"UF4007,1KV,1A,DO-41,TP"	
D503	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D504	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D505	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
D506	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D507	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D508	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D509	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D510	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D511	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D512	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D513	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D602	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D604	0402-000012	DIODE-RECTIFIER	"UF4007,1KV,1A,DO-41,TP"	
D605	0402-000012	DIODE-RECTIFIER	"UF4007,1KV,1A,DO-41,TP"	
D606	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D607	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D608	0402-000274	DIODE-RECTIFIER	"UF4004,400V,1A,DO-41,TP"	
D610	0402-000012	DIODE-RECTIFIER	"UF4007,1KV,1A,DO-41,TP"	
D611	0402-001118	DIODE-RECTIFIER	"UF1G,400V,1.2A,DO-204AL,TP"	
D612	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D614	0402-000546	DIODE-RECTIFIER	"TVR10G,400V,1.0A,DO-41,TP"	
D615	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
D616	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
EY301	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY302	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY401	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY501	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY502	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	

Loc. No.	Code No.	Description	Specification	Remarks
EY503	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY504	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY505	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY506	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY507	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY508	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY509	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY601	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY602	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY603	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY604	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY605	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY606	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY607	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY608	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY609	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
FH1	3602-000001	FUSE-CLIP	"-,-,30mohm"	
GT603	BH71-40300A	PIN-HINGE	"-,BRASS,D2.36,SN,HEAT/SINK"	
GT604	BH71-40300A	PIN-HINGE	"-,BRASS,D2.36,SN,HEAT/SINK"	
IC202	1103-000156	IC-EEPROM	"24C04,512x8BIT,DIP,8P,300MIL,1"	
IC603	1201-000229	IC-OP AMP	"324,DIP,14P,300MIL,QUAD,100V/m"	
IC605	1203-000495	IC-RESET	"7045,T0-92,3P,-,PLASTIC,4.3/4."	
JP1	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP10	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP11	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP12	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP13	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP14	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP16	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP17	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP18	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP19	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP20	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP21	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP22	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP23	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP24	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP25	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP26	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP27	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP29	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP3	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP30	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	

Loc. No.	Code No.	Description	Specification	Remarks
JP31	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP32	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP33	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP34	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP35	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP36	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP37	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP38	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP39	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP4	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP40	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP41	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP42	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP44	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP45	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP46	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP47	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP48	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP49	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP5	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP50	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP55	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP56	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP57	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP58	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP60	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP62	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP63	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP64	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP65	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP66	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP67	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP68	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP69	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP70	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP71	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP8	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP89	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP9	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP90	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP91	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
JP92	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,"	
MP1.1	BH41-00057A	PCB-MAIN	"TP17LT,FR-1,1 LAYER,1.6T*247*247,1.6T"	

Loc. No.	Code No.	Description	Specification	Remarks
Q301	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q302	0501-000303	TR-SMALL SIGNAL	"KSA733,PNP,250mW,TO-92,TP,120-"	
Q303	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q401	0501-000122	TR-SMALL SIGNAL	"2N3904,NPN,625mW,TO-92,TP,100-"	
Q403	0501-000372	TR-SMALL SIGNAL	"KSC2383-Y,NPN,900mW,TO-92L,-,1"	
Q405	0501-000303	TR-SMALL SIGNAL	"KSA733,PNP,250mW,TO-92,TP,120-"	
Q406	0501-000303	TR-SMALL SIGNAL	"KSA733,PNP,250mW,TO-92,TP,120-"	
Q407	0501-000010	TR-SMALL SIGNAL	"KSC1008,NPN,800mW,TO-92,TP,120"	
Q412	0501-000404	TR-SMALL SIGNAL	"KSD1616-Y,NPN,750mW,TO-92,TP,1"	
Q413	0501-000321	TR-SMALL SIGNAL	"KSB1116-Y,PNP,0.75W,TO-92,-,13"	
Q414	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q415	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q416	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q501	0501-000416	TR-SMALL SIGNAL	"KSP92,PNP,625mW,TO-92,TP,25"	
Q502	0501-000143	TR-SMALL SIGNAL	"2N6520,PNP,625mW,TO-92,-,30-20"	
Q503	0501-000303	TR-SMALL SIGNAL	"KSA733,PNP,250mW,TO-92,TP,120-"	
Q551	0501-000413	TR-SMALL SIGNAL	"KSP44,NPN,625mW,TO-92,-,50-200"	
Q601	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q602	0501-000122	TR-SMALL SIGNAL	"2N3904,NPN,625mW,TO-92,TP,100-"	
Q604	0501-000404	TR-SMALL SIGNAL	"KSD1616-Y,NPN,750mW,TO-92,TP,1"	
Q608	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q609	0501-002228	TR-SMALL SIGNAL	"KTA1281,PNP,1000MW,TO-92L,TP,120-240"	
Q610	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
Q651M	0501-000586	TR-SMALL SIGNAL	"KSC945,NPN,250mW,TO-92,TP,120-"	
R200	2001-000869	R-CARBON	"560HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R201	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R202	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R203	2001-000734	R-CARBON	"4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R204	2001-000734	R-CARBON	"4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R206	2001-000515	R-CARBON	"2200HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R207	2001-000869	R-CARBON	"560HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R208	2001-000869	R-CARBON	"560HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R209	2001-000734	R-CARBON	"4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R210	2001-000472	R-CARBON	"2.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R211	2001-000904	R-CARBON	"6200HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R212	2001-000613	R-CARBON	"3.9KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R213	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R214	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R215	2001-000281	R-CARBON	"1000HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R216	2001-000281	R-CARBON	"1000HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R217	2001-000281	R-CARBON	"1000HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R218	2001-000281	R-CARBON	"1000HM,5%,1/8W,AA,TP,1.8X3.2MM"	
R220	2001-000281	R-CARBON	"1000HM,5%,1/8W,AA,TP,1.8X3.2MM"	

Loc. No.	Code No.	Description	Specification	Remarks
R221	2001-000734	R-CARBON	"4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R222	2001-000734	R-CARBON	"4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R224	2001-000869	R-CARBON	"56OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R225	2001-000869	R-CARBON	"56OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R229	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R230	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R235	2001-000472	R-CARBON	"2.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R236	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R301	2001-000869	R-CARBON	"56OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R302	2004-000580	R-METAL	"22Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R303	2001-000890	R-CARBON	"6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R304	2001-000890	R-CARBON	"6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R306	2004-001022	R-METAL	"5.6Kohm,1%,1/4W,AA,TP,2.4x6.4m"	
R307	2001-001053	R-CARBON(S)	"1.5OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R308	2001-001088	R-CARBON(S)	"1KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R309	2004-004014	R-METAL	"2.4ohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R310	2004-001136	R-METAL	"6.8Kohm,1%,1/4W,AA,TP,2.4x6.4m"	
R311	2001-000890	R-CARBON	"6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R312	2001-000812	R-CARBON	"5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R315	2004-004014	R-METAL	"2.4ohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R316	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R317	2001-000561	R-CARBON	"27KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R318	2001-000766	R-CARBON	"43KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R319	2001-000947	R-CARBON	"7.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R320	2001-000331	R-CARBON	"12KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R321	2001-000591	R-CARBON	"3.3KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R322	2001-000890	R-CARBON	"6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R323	2001-000022	R-CARBON(S)	"33OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R324	2001-000660	R-CARBON	"33KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R325	2003-000805	R-METAL OXIDE(S)	"82ohm,5%,1W,AA,TP,3.3x9mm"	
R326	2003-000805	R-METAL OXIDE(S)	"82ohm,5%,1W,AA,TP,3.3x9mm"	
R402	2001-000869	R-CARBON	"56OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R403	2004-001226	R-METAL	"750ohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R404	2004-000498	R-METAL	"2.7Kohm,1%,1/4W,AA,TP,2.4x6.4m"	
R405	2001-000591	R-CARBON	"3.3KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R406	2001-000522	R-CARBON	"22KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R407	2001-000109	R-CARBON(S)	"470OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R408	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R409	2001-000812	R-CARBON	"5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R410	2003-000650	R-METAL OXIDE(S)	"330ohm,5%,2W,AA,TP,4x12mm"	
R411	2001-001096	R-CARBON(S)	"2.2OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R412	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R413	2001-001038	R-CARBON(S)	"0.56OHM,5%,1/2W,AA,TP,2.4X6.4MM"	

Loc. No.	Code No.	Description	Specification	Remarks
R414	2001-001038	R-CARBON(S)	"0.56OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R415	2003-000429	R-METAL OXIDE(S)	"1.5Kohm,5%,2W,AA,TP,4x12mm"	
R416	2001-000107	R-CARBON(S)	"150KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R418	2001-000221	R-CARBON	"1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R419	2001-000397	R-CARBON	"180KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R420	2001-000354	R-CARBON	"150KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R422	2001-001006	R-CARBON	"82OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R423	2001-000258	R-CARBON	"1.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R424	2004-000284	R-METAL	"12Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R425	2001-000044	R-CARBON	"1.2KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R426	2001-000110	R-CARBON	"10OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R427	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R428	2003-000653	R-METAL OXIDE(S)	"330ohm,5%,3W,AA,TP,6x16mm"	
R429	2001-000052	R-CARBON(S)	"3.3KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R430	2001-001078	R-CARBON(S)	"15KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R431	2003-000407	R-METAL OXIDE(S)	"0.6ohm,5%,2W,AA,TP,4x12mm"	
R432	2001-000020	R-CARBON(S)	"22OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R434	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R435	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R436	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R437	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R438	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R439	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R440	2001-000947	R-CARBON	"7.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R441	2001-000411	R-CARBON	"18KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R443	2003-000502	R-METAL OXIDE(S)	"150ohm,5%,2W,AA,TP,4x12mm"	
R444	2003-000767	R-METAL OXIDE(S)	"680ohm,5%,2W,AA,TP,4x12mm"	
R445	2001-000019	R-CARBON(S)	"10OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R446	2001-000117	R-CARBON(S)	"68OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R447	2003-000777	R-METAL OXIDE(S)	"68ohm,5%,2W,AA,TP,4x12mm"	
R448	2003-000777	R-METAL OXIDE(S)	"68ohm,5%,2W,AA,TP,4x12mm"	
R449	2001-000211	R-CARBON	"1OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R450	2001-000522	R-CARBON	"22KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R451	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R452	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R453	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R454	2003-000650	R-METAL OXIDE(S)	"330ohm,5%,2W,AA,TP,4x12mm"	
R500	2001-000435	R-CARBON	"1MOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R501	2001-000472	R-CARBON	"2.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R502	2004-000979	R-METAL	"47Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R503	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R504	2001-000008	R-CARBON	"15KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R505	2001-000241	R-CARBON	"1.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	

Loc. No.	Code No.	Description	Specification	Remarks
R506	2004-000657	R-METAL	"27Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R507	2004-000216	R-METAL	"10Kohm,1%,1/4W,AA,TP,2.4x6.4mm"	
R508	2002-000121	R-COMPOSITION	"1Mohm,10%,1/2W,AA,TP,3.5x9.5mm"	
R509	2002-000121	R-COMPOSITION	"1Mohm,10%,1/2W,AA,TP,3.5x9.5mm"	
R510	2001-000837	R-CARBON	"51KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R511	2001-000478	R-CARBON	"2.7OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R512	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R513	2001-001106	R-CARBON(S)	"220KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R514	2001-000837	R-CARBON	"51KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R515	2001-000546	R-CARBON	"270KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R517	2001-000987	R-CARBON	"820KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R518	2001-001031	R-CARBON	"91KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R519	2001-000356	R-CARBON	"150KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R520	2001-000241	R-CARBON	"1.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R521	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
R522	2002-000121	R-COMPOSITION	"1Mohm,10%,1/2W,AA,TP,3.5x9.5mm"	
R524	2001-000660	R-CARBON	"33KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R525	2001-000273	R-CARBON	"100KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R526	2001-000908	R-CARBON	"62KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R528	2001-000432	R-CARBON	"1MOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R529	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R551	2001-000530	R-CARBON	"240KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R552	2001-000537	R-CARBON	"24KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R553	2001-000642	R-CARBON	"330KOHM,5%,1/2W,AA,TP,3.3X9MM"	
R554	2001-001110	R-CARBON(S)	"240KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R555	2001-000042	R-CARBON	"1KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R556	2001-000890	R-CARBON	"6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R561	2001-000432	R-CARBON	"1MOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R570	2001-001071	R-CARBON(S)	"12KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R600	2001-001129	R-CARBON(S)	"330KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R601	2001-001129	R-CARBON(S)	"330KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R602	2001-000023	R-CARBON	"47OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R603	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R604	2001-000857	R-CARBON	"560OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R607	2003-000014	R-METAL OXIDE(S)	"10Kohm,5%,3W,AA,TP,6x16mm"	
R608	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R609	2001-000107	R-CARBON(S)	"150KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R610	2001-000107	R-CARBON(S)	"150KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R611	2001-001079	R-CARBON(S)	"15OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R612	2003-000738	R-METAL OXIDE(S)	"56Kohm,5%,2W,AA,TP,4x12mm"	
R614	2001-001107	R-CARBON(S)	"220ohm,5%,1/2W,AA,TP,2.4x6.4mm"	
R615	2001-001088	R-CARBON(S)	"1KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R617	2001-001037	R-CARBON(S)	"0.39OHM,5%,1/2W,AA,TP,2.4X6.4MM"	

*Loc. No.	Code No.	Description	Specification	Remarks
R618	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R619	2003-000471	R-METAL OXIDE(S)	"10ohm,5%,2W,AA,TP,4x12mm"	
R620	2001-001152	R-CARBON(S)	"47KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R621	2001-000989	R-CARBON	"820KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R622	2001-000211	R-CARBON	"1OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R625	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R630	2001-000786	R-CARBON	"47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R631	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R632	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R633	2001-000211	R-CARBON	"1OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R651M	2003-000631	R-METAL OXIDE(S)	"3.3ohm,5%,3W,AA,TP,6x16mm"	
R652M	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R654M	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
SK501	4715-000001	SURGE ABSORBER	"1KV,+50-10%,-,-,"	
TP501	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
X201	2801-000005	CRYSTAL-UNIT	"8MHz,50ppm,28-AAM,S,35ohm,TP"	
ZD201	0403-000355	DIODE-ZENER	"UZ5.1BSB,5.1V,4.97-5.18V,500mW"	
ZD202	0403-000355	DIODE-ZENER	"UZ5.1BSB,5.1V,4.97-5.18V,500mW"	
ZD203	0403-000355	DIODE-ZENER	"UZ5.1BSB,5.1V,4.97-5.18V,500mW"	
ZD204	0403-000355	DIODE-ZENER	"UZ5.1BSB,5.1V,4.97-5.18V,500mW"	
ZD205	0403-000361	DIODE-ZENER	"UZ6.2BSB,6.2V,5.99-6.24V,500mW"	
ZD502	0403-001068	DIODE-ZENER	"UZ4.7BSA,4.7V,4.47-4.65V,500mW"	
ZD601	0403-000361	DIODE-ZENER	"UZ6.2BSB,6.2V,5.99-6.24V,500mW"	
ZD603	0403-001068	DIODE-ZENER	"UZ4.7BSA,4.7V,4.47-4.65V,500mW"	
HS501	BH99-00001B	"ASSY,HEAT/SINK"	"H/S FBT,SPRING,KA5802,DTV56F,KSC2058,OIL SILICON,-,-"	
CIS	0205-001027	OIL-SILICON	"G746,-,-"	
CIS	0402-001255	DIODE-RECTIFIER	"DTV56F,1.5KV,10A,TO-220AC,BK"	
CIS	0502-000465	TR-POWER	"KTD2058-Y,NPN,25W,TO-220IS,ST,"	
CIS	0502-001129	TR-POWER	"KSC5802,NPN,70W,TO-3PF,ST,5-"	
CIS	BH61-00004A	SPRING-TR	"CDA,CDB,SUS304,T0.5,-,-,-,-"	
CIS	BH61-70003A	SPRING	"CVT4857,STS304-W1/2H,T0.5,W3.8"	
CIS	BH62-00002A	HEAT/SINK-FBT	"-,T1.0,-,A1050S,DA/DB"	
HS301	BH99-00002A	"ASSY,HEAT/SINK"	"H/S V.IC,SCREW+NUT,KA2142,-,-,OIL SILICON,-,-"	
CIS	0205-001027	OIL-SILICON	"G746,-,-"	
CIS	1204-001508	IC-VERTICAL DEF.	"KA2142,SIP,10P,-,PLASTIC,35V,15W,-20TO+70C,ST,VERTICAL DEFLECTION"	
CIS	6006-001008	SCREW-ASS'Y MACH	"WSP,BH,+,M3,L10,ZPC(YEL),SWRCH"	
CIS	6021-000118	NUT-HEXAGON	"1C,M3,ZPC(YEL),SM20C"	
CIS	BH62-00003A	HEAT/SINK-V.IC	"-,T1,-,A1050S,DA/DB"	
HS601	BH99-00003A	"ASSY,HEAT/SINK"	"H/S POWER,SPRING,DP104,-,-,RUBBER,-,-"	
CIS	BH13-00004A	IC-HYBRID	"-,DP104C,TO-220-5L,5P,POWER SWITCH,-,-"	
CIS	BH61-00004A	SPRING-TR	"CDA,CDB,SUS304,T0.5,-,-,-,-"	
CIS	BH62-00004A	HEAT/SINK-POWER	"-,T1,-,A1050S,DA/DB"	
CIS	BH62-20001B	RUBBER	"CSQ4357,W25*L20*T0.45,-,-,-,-"	

Loc. No.	Code No.	Description	Specification	Remarks
HS401	BH99-00006A	"ASSY,HEAT/SINK"	"H/S,SCREW+NUT,IRF630,-,-,OIL SILICON,-,-"	
CIS	0205-001027	OIL-SILICON	"G746,-,-"	
CIS	0505-001309	FET-SILICON	"IRF630,N,200V,10A,0.4OHM,100W,TO-220"	
CIS	6006-001008	SCREW-ASS'Y MACH	"WSP,BH,+,M3,L10,ZPC(YEL),SWRCH"	
CIS	6021-000118	NUT-HEXAGON	"1C,M3,ZPC(YEL),SM20C"	
CIS	BH62-30024A	HEAT/SINK-TR	"SPC,T1,SN,CFX1577L"	
HS402	BH99-00015A	ASSY HEAT/SINK	"HS TR,SPRING,IRF630(SGS),-,-,OIL SILICON"	
CIS	0205-001027	OIL-SILICON	"G746,-,-"	
CIS	0505-001309	FET-SILICON	"IRF630,N,200V,10A,0.4OHM,100W,TO-220"	
CIS	BH61-00004A	SPRING-TR	"CDA,CDB,SUS304,T0.5,-,-,-"	
CIS	BH62-00024A	HEAT SINK—TR	"SPC-1,T1.0,-,DT,IBM TANGO"	

7-2 Video PCB Parts

Loc. No.	Code No.	Description	Specification	Remarks
-	BH98-00125E	ASSY PCB/VIDEO	"TP17LS7TSY,TSED,CHINA,-"	
CIS	BH75-00047A	UNIT/SHIELD-VIDEO/CAP	"CL17LO,SPTE T0.3,-,-"	
CIS	BH71-00006B	SHIELD-VIDEO/CAP	"CL17LO,SPTE,0.2,-,-"	
CIS	BH71-10311A	EARTH-PLATE		
CIS	BH75-00192H	UNIT/SHIELD-VIDEO	"DEL,-,SPTE,-,-,14"",15"",17"",-"	
CIS	BH61-00002A	SPRING-VIDEO	"CDB7907,STS H14 ,T1.0,-,-,-,NORMAL CDT"	
CIS	BH71-00007A	SHIELD-VIDEO	"CDA4507,SPTE,T0.2,-,-"	
CIS	BH72-00024A	HOLDER-VIDEO	"CDA4507,ABS+PC,5V,IV16,-,NORMAL CRT"	
CIS	BH73-00014A	HOLDER-RUBBER(NORMAL)	"DEL,SILICON V2,GRAY,-,-,-,NORMAL"	
CN101	3711-004228	CONNECTOR-HEADER	"BOX,6P,1R,2MM,ANGLE,SN"	
CN102	BH39-00015A	CBF-HARNESS	"13P/14P,200MM,WHT/BLK/RED/BLU,UL1007,AWG26,SMH200-13/YBNH200-14"	
IC101	BH09-00022A	IC-OSD PROCESSOR	"TP17L,KB2502-08,32P,-"	
LJP1	BH39-40306D	CBF-HARNESS	",80MM,BLK,1015,AWG22,-,-,-,-,-"	
SH/VID	6502-000001	CABLE CLAMP	"DAWH-5NB,D15,L35,NTR,NYLON66"	
SH/VID+H/S	6003-000010	SCREW-TAPTITE	"BWH,+,B,M3,L10,ZPC(YEL),SWRCH1"	
SK01	3704-001116	SOCKET-CRT	"11P,22.5PI,26.5PI,NI,-"	
-	BH91-00080A	ASSY VIDEO/AUTO-SN	"TP17LT-07A1/4141,-,-,-"	
BD102	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
BD103	3301-000011	CORE-FERRITE BEAD	"AA,3.5x1.0x5.7mm,1500,2375G"	
C102	2401-000603	C-AL	"1uF,20%,50V,GP,TP,5x11,5"	
C103	2401-000037	C-AL	"470uF,20%,16V,GP,TP,8x11.5,5"	
C105	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
C106	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C107	2401-000010	C-AL	"220uF,20%,16V,GP,-,6.3x11mm,2."	
C108	2401-000049	C-AL	"47uF,20%,100V,WT,TP,10x16,5"	
C109	2201-000177	"C-CERAMIC,DISC"	"10nF,10%,50V,Y5P,TP,12x3.5,5"	
C110	2401-000025	C-AL	"100uF,20%,16V,GP,TP,6.3x11,5"	
C112	2401-002075	C-AL	"4.7uF,20%,50V,GP,TP,5x11,5"	
C113	2301-000287	"C-FILM,PEF"	"5.6nF,5%,100V,TP,10.5x12.5x6.5"	
C116	2301-000188	"C-FILM,PEF"	"1nF,5%,100V,TP,10.5x12.5x6.5,5"	
C117	2301-000188	"C-FILM,PEF"	"1nF,5%,100V,TP,10.5x12.5x6.5,5"	
C118	2201-000471	"C-CERAMIC,DISC"	"0.33nF,10%,50V,Y5P,TP,4x3.5,5"	
C119	2201-000291	"C-CERAMIC,DISC"	"1nF,10%,500V,Y5P,TP,7.5x3.5,5"	
C120	2201-000285	"C-CERAMIC,DISC"	"1nF,10%,1kV,Y5P,TP,8x5,5"	
C121	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C123	2201-000019	"C-CERAMIC,DISC"	"10nF,+80-20%,500V,Y5V,TP,13.5x4mm,5"	
C124	2301-000148	"C-FILM,PEF"	"10nF,5%,100V,TP,7x3.2x7mm,5mm"	
C125	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
C126	2201-000117	"C-CERAMIC,DISC"	"1.8nF,10%,500V,Y5P,TP,8.5x3,5"	
C128	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
C151	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C152	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
C160	2401-000031	C-AL	"47uF,20%,16V,GP,TP,5x11,5"	

Loc. No.	Code No.	Description	Specification	Remarks
CB01	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CB02	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CB04	2401-000055	C-AL	"1uF,20%,160V,WT,TP,3x11,5mm"	
CB05	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
CB06	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
CB07	2201-000146	"C-CERAMIC,DISC"	"0.1nF,5%,50V,SL,TP,5x3.5,5"	
CB08	2201-000411	"C-CERAMIC,DISC"	"0.27nF,10%,50V,Y5P,TP,4x3.5,5"	
CG01	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CG02	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CG04	2401-000055	C-AL	"1uF,20%,160V,WT,TP,3x11,5mm"	
CG05	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
CG06	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
CG07	2201-000146	"C-CERAMIC,DISC"	"0.1nF,5%,50V,SL,TP,5x3.5,5"	
CG08	2201-000411	"C-CERAMIC,DISC"	"0.27nF,10%,50V,Y5P,TP,4x3.5,5"	
CR01	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CR02	2201-000119	"C-CERAMIC,DISC"	"100nF,+80-20%,50V,Y5V,TP,8x3,5"	
CR04	2401-000055	C-AL	"1uF,20%,160V,WT,TP,3x11,5mm"	
CR05	2301-000010	"C-FILM,PEF"	"100nF,5%,100V,TP,11.5x12.5mm,5"	
CR06	2202-002009	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Y5V,TP,2.3X3"	
CR07	2201-000146	"C-CERAMIC,DISC"	"0.1nF,5%,50V,SL,TP,5x3.5,5"	
CR08	2201-000411	"C-CERAMIC,DISC"	"0.27nF,10%,50V,Y5P,TP,4x3.5,5"	
D102	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DB01	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DB02	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DB03	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DB04	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DB05	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DG01	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DG02	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DG03	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DG04	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DG05	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DR01	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DR02	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
DR03	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DR04	0401-000004	DIODE-SWITCHING	"1SS244,250V,200mA,DO-34,TP"	
DR05	0401-000005	DIODE-SWITCHING	"1N4148,100V,200MA,DO-35,TP"	
EY1	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
EY2	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY3	6042-000001	EYELET	"ID2.2,OD2.7,L3.1,SN,BSS3-E/EH"	
EY4	6042-000002	EYELET	"ID1.5,OD2,L3.1,SN,BSS3-E/EH"	
G2	BH71-40300A	PIN-HINGE	"-,BRASS,D2.36,SN,HEAT/SINK"	
GND	BH71-40300A	PIN-HINGE	"-,BRASS,D2.36,SN,HEAT/SINK"	

Loc. No.	Code No.	Description	Specification	Remarks
JP103	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP109	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP116	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP117	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP119	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP122	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP123	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP124	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP127	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP128	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP133	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP134	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP136	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP137	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP140	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP142	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP146	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP147	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP148	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP150	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP151	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
JP152	BH39-40305U	CBF HARNESS	",52MM,-,-,AWG22(0.6PI),-,-,-,-"	
L101	2701-000112	INDUCTOR-AXIAL	"100uH,10%,3x7mm"	
L103	2701-000164	INDUCTOR-AXIAL	"27uH,10%,4.2x9.8mm"	
LB01	2701-000172	INDUCTOR-AXIAL	"330nH,10%,3x7mm"	
LG01	2701-000172	INDUCTOR-AXIAL	"330nH,10%,3x7mm"	
LR01	2701-000172	INDUCTOR-AXIAL	"330nH,10%,3x7mm"	
MP1.2	BH41-00058A	PCB-VIDEO	"TP17LT,PHENOL,-,1.6T*247*330MM,-"	
Q102	0501-000122	TR-SMALL SIGNAL	"2N3904,NPN,625mW,TO-92,TP,100-"	
QB01	0501-000140	TR-SMALL SIGNAL	"2N5551,NPN,625mW,TO-92,-,80-25"	
QB02	0501-000138	TR-SMALL SIGNAL	"2N5401,PNP,625mW,TO-92,TP,60-2"	
QG01	0501-000140	TR-SMALL SIGNAL	"2N5551,NPN,625mW,TO-92,-,80-25"	
QG02	0501-000138	TR-SMALL SIGNAL	"2N5401,PNP,625mW,TO-92,TP,60-2"	
QR01	0501-000140	TR-SMALL SIGNAL	"2N5551,NPN,625mW,TO-92,-,80-25"	
QR02	0501-000138	TR-SMALL SIGNAL	"2N5401,PNP,625mW,TO-92,TP,60-2"	
R101	2001-000522	R-CARBON	"22KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R102	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R103	2001-001138	R-CARBON(S)	"390OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R104	2001-001138	R-CARBON(S)	"390OHM,5%,1/2W,AA,TP,2.4X6.4MM"	
R107	2001-000429	R-CARBON	"1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R108	2001-000812	R-CARBON	"5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R109	2001-000563	R-CARBON	"27KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R114	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	

Loc. No.	Code No.	Description	Specification	Remarks
R115	2001-000577	R-CARBON	"2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R116	2001-000290	R-CARBON	"10KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R117	2001-000515	R-CARBON	"220OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R118	2001-000857	R-CARBON	"560OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R119	2001-000857	R-CARBON	"560OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
R120	2002-001022	R-COMPOSITION	"30MOHM,5%,1/4W,AA,TP,2.5X6.5MM"	
R123	2001-000432	R-CARBON	"1MOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
R124	2001-000034	R-CARBON	"220OHM,5%,1/4W,AA,TP,2.4X6.4MM"	
RB01	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB02	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB03	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB04	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB08	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB09	2001-000962	R-CARBON	"75KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
RB10	2001-000705	R-CARBON	"39OHM,5%,1/2W,AA,TP,3.3X9MM"	
RB11	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB12	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB13	2001-001000	R-CARBON	"82KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB14	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB15	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RB20	2001-000947	R-CARBON	"7.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG01	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG02	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG03	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG04	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG08	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG09	2001-000962	R-CARBON	"75KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
RG10	2001-000705	R-CARBON	"39OHM,5%,1/2W,AA,TP,3.3X9MM"	
RG11	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG12	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG13	2001-001000	R-CARBON	"82KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG14	2001-000221	R-CARBON	"1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG15	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RG20	2001-000947	R-CARBON	"7.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR01	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR02	2001-000969	R-CARBON	"75OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR03	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR04	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR08	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR09	2001-000962	R-CARBON	"75KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	
RR10	2001-000705	R-CARBON	"39OHM,5%,1/2W,AA,TP,3.3X9MM"	
RR11	2001-000281	R-CARBON	"100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR12	2001-000449	R-CARBON	"2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	

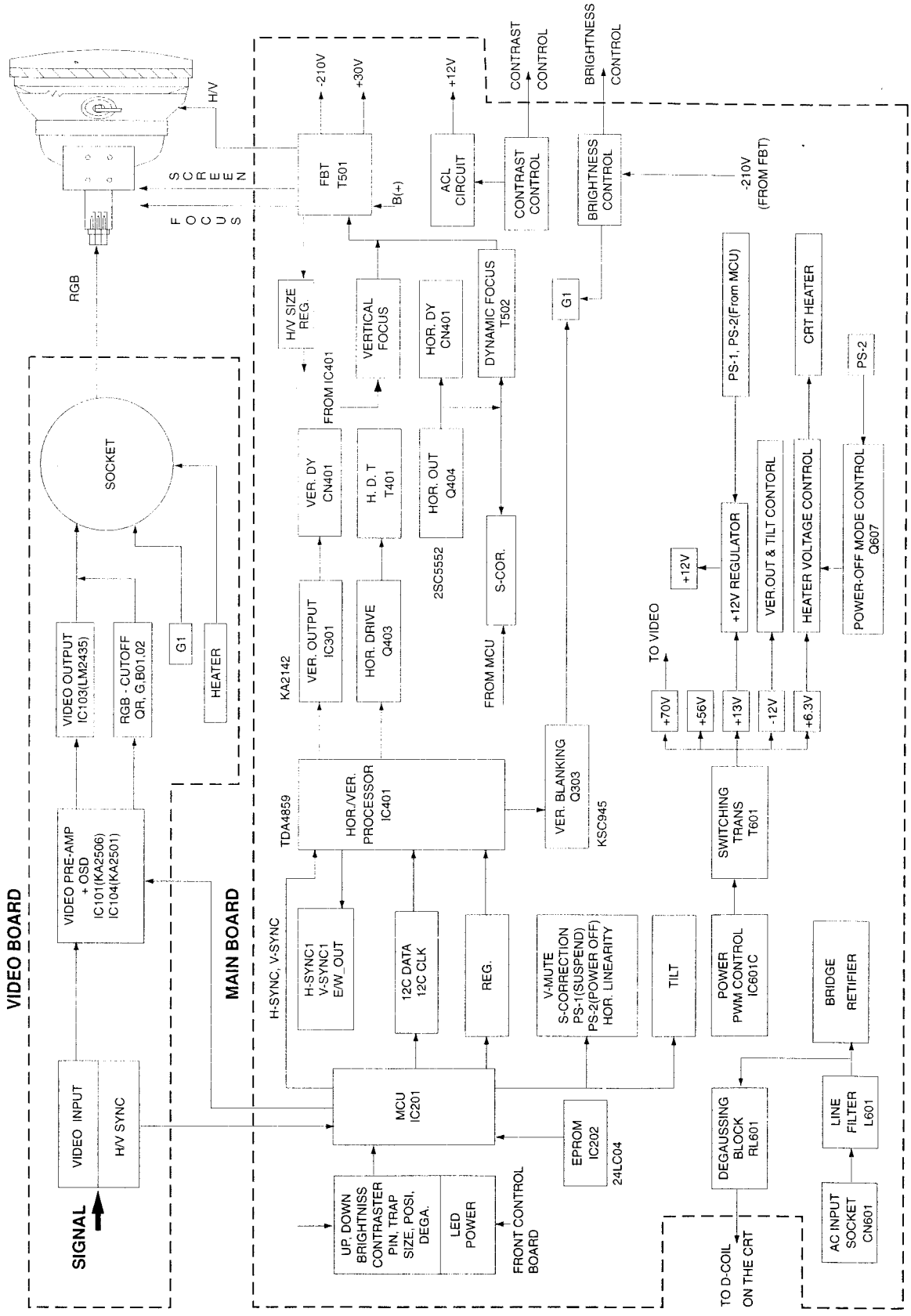
Loc. No.	Code No.	Description	Specification	Remarks
RR13	2001-001000	R-CARBON	"82KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR14	2001-000780	R-CARBON	"470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR15	2001-000793	R-CARBON	"47OHM,5%,1/8W,AA,TP,1.8X3.2MM"	
RR20	2001-000947	R-CARBON	"7.5KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	
SK101	1405-001064	SURGE ABSORBER	"400V,20%,-,-,AXIAL"	
SK102	4715-000001	SURGE ABSORBER	"1KV,+50-10%,-,-,"	
SKB01	4715-000102	SURGE ABSORBER	"200V,20%,1000A,-,RADIAL"	
SKG01	4715-000102	SURGE ABSORBER	"200V,20%,1000A,-,RADIAL"	
SKR01	4715-000102	SURGE ABSORBER	"200V,20%,1000A,-,RADIAL"	
HS103	BH99-00004B	"ASSY,HEAT/SINK"	"H/S VIDEO,SCREW+NUT,LM2437,-,-,OIL SILICON,-,-"	
CIS	0205-001027	OIL-SILICON	"G746,-,-"	
CIS	6006-001008	SCREW-ASS'Y MACH	"WSP,BH,+,M3,L10,ZPC(YEL),SWRCH"	
CIS	6021-000118	NUT-HEXAGON	"1C,M3,ZPC(YEL),SM20C"	
CIS	BH13-00003A	IC-HYBRID	"-,LM2437,TO-220,9P,CRT DRIVER,0 TO 6.0V,-"	
CIS	BH62-00006A	HEAT SINK-VIDEO	"-,A1050S T2.0,-,DB"	

7-3 Different Parts List

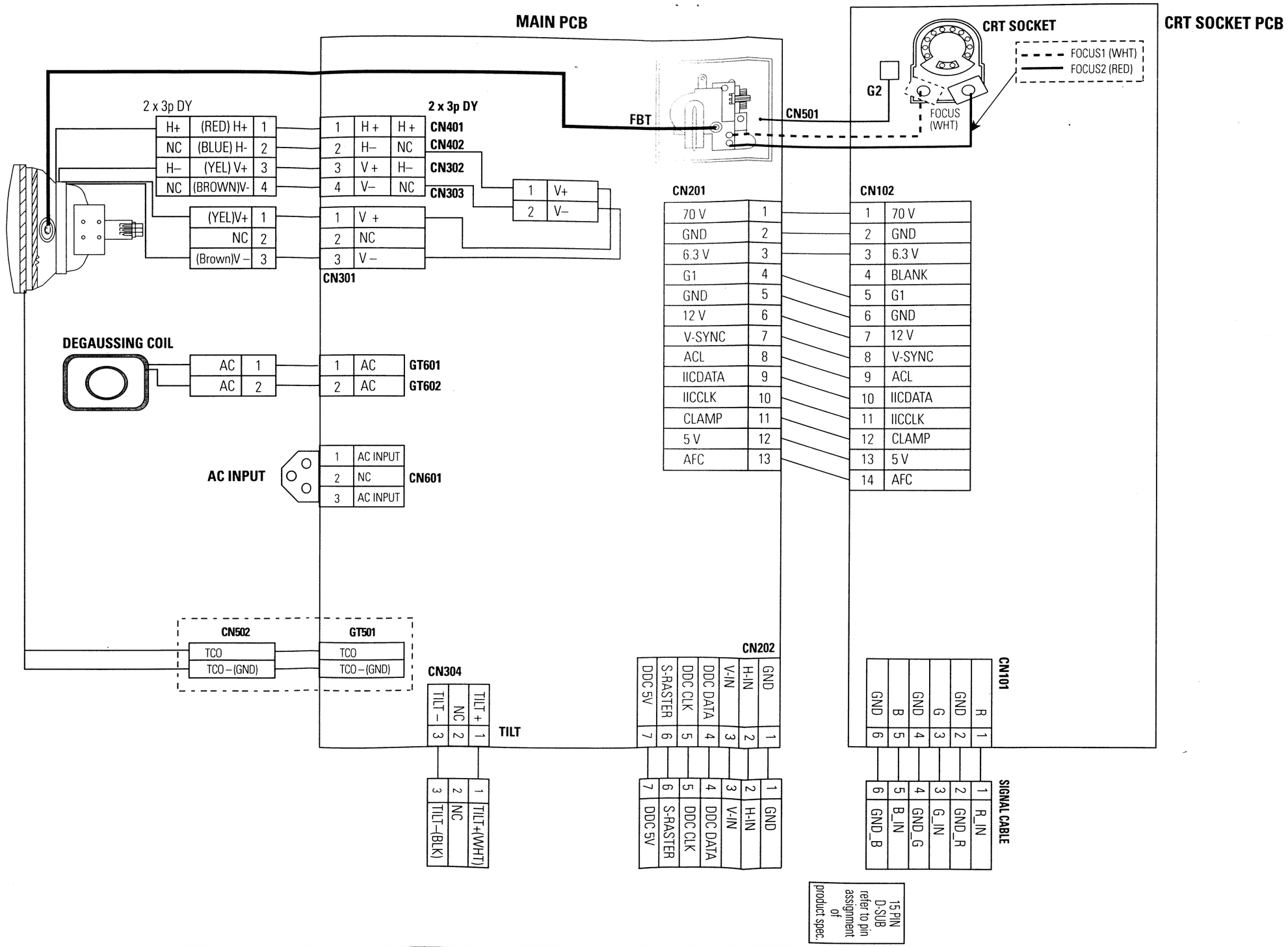
	SDD 0.28/0.26	TSB 0.28	PHS 0.28	TSB MINI
R417	2001-000290 ; R-CF,1/6T,10k	2001-000890 ; R-CF,1/6T,6.8k	2001-000890 ; R-CF,1/6T,6.8k	2001-000890 ; R-CF,1/6T,6.8k
R516	2002-001063 ; R-COMP,1/2T,160k	2002-001056 ; R-COMP,1/4T,180k	2002-001056 ; R-COMP,1/4T,180k	2002-001056 ; R-COMP,1/4T,180k
R527	2001-000864 ; R-CF,1/8T,56k	2001-000010 ; R-CF,1/8T,68k	2001-000010 ; R-CF,1/8T,68k	2001-000004 ; R-CF,1/8T,200k
C431	2306-000179 ; C-MPP,250V,300nF	2306-000179 ; C-MPP,250V,300nF	2306-000171 ; C-MPP,250V,270nF	2306-000179 ; C-MPP,250V,300nF
R309	2004-004014 ; R-MF,1/4T,2.4ohm	2004-004014 ; R-MF,1/4T,2.4ohm	2001-000477 ; R-CF,1/2T,2.7ohm	2004-004424 ; R-MF,1/4T,3.01ohm
R315	2004-004014 ; R-MF,1/4T,2.4ohm	2004-004014 ; R-MF,1/4T,2.4ohm	2004-004424 ; R-MF,1/4T,3.01ohm	2004-004424 ; R-MF,1/4T,3.01ohm
R617	2001-001037 ; R-CF,1/2T,0.39ohm	2001-001037 ; R-CF,1/2T,0.39ohm	2001-001038 ; R-CF,1/2T,0.56ohm	2001-001037 ; R-CF,1/2T,0.39ohm
C404	2301-000148 ; C-FILM,100V,10nF	2301-000148 ; C-FILM,100V,10nF	2301-000148 ; C-FILM,100V,10nF	2301-000013 ; C-FILM,100V,4.7nF
C422	-	-	-	2201-000146 ; C-CERA,50V,100pF
R418	2001-000221 ; R-CF,1/8T,1.2k	2001-000221 ; R-CF,1/8T,1.2k	2001-000221 ; R-CF,1/8T,1.2k	2001-000241 ; R-CF,1/8T,1.5k
R308	2001-001088 ; R-CF,1/2T,1k	2001-001088 ; R-CF,1/2T,1k	2001-001088 ; R-CF,1/2T,1k	-
R525	2001-000273 ; R-CF,1/8T,100k	2001-000273 ; R-CF,1/8T,100k	2001-000273 ; R-CF,1/8T,100k	2001-000356 ; R-CF,1/8T,150k
R501	2001-000472 ; R-CF,1/8T,2.7k	2001-000472 ; R-CF,1/8T,2.7k	2001-000472 ; R-CF,1/8T,2.7k	2001-000241 ; R-CF,1/8T,1.5k
R520	2001-000241 ; R-CF,1/8T,1.5k	2001-000241 ; R-CF,1/8T,1.5k	2001-000241 ; R-CF,1/8T,1.5k	2001-000472 ; R-CF,1/8T,2.7k
C419	2301-001305 ; C-PP,1.6kV,3%,2.2nF	2301-001305 ; C-PP,1.6kV,3%,2.2nF	2301-001305 ; C-PP,1.6kV,3%,2.2nF	2303-001022 ; C-PP,2.5k,5%,2.0nF
C420	2301-001306 ; C-PP,1.6kV,3%,2.5nF	2301-001306 ; C-PP,1.6kV,3%,2.5nF	2301-001306 ; C-PP,1.6kV,3%,2.5nF	2303-001022 ; C-PP,2.5k,5%,2.0nF
T501	BH26-00026A ; FQB17A001	BH26-00026A ; FQB17A00	BH26-00026A ; FQB17A001	BH26-00060A ; FQB-17A001M
.. JP120	-	-	-	BH39-40305U ; JUMPER WIRE
VIDEO SHIELD	BH75-00033C UNIT/SHIELD-VIDEO;CDB7907,SPTE,	BH75-00033C UNIT/SHIELD-VIDEO;CDB7907,SPTE,	BH75-00033C UNIT/SHIELD-VIDEO;CDB7907,SPTE,	BH75-00034G UNIT/SHIELD-VIDEO;M570,SPTE,

Loc. No.	Code No.	Description	Specification	Remarks

8 Block Diagrams



Memo


MAIN PCB
CRT SOCKET PCB
CRT SOCKET
FOCUS1 (WHT)
FOCUS2 (RED)
G2
FOCUS (WHT)
FBT
CN501
2 x 3p DY
H+ (RED) H+ 1
NC (BLUE) H- 2
H– (YEL) V+ 3
NC (BROWN)V- 4
2 x 3p DY
1 H+ H+ CN401
2 H– NC CN402
3 V+ H– CN302
4 V– NC CN303
(YEL)V+ 1
NC 2
(Brown)V – 3
1 V+
2 V–
1 V+
2 NC
3 V –
CN301
CN201
CN102
70 V 1
GND 2
6.3 V 3
G1 4
GND 5
12 V 6
V-SYNC 7
ACL 8
IICDATA 9
IICCLK 10
CLAMP 11
5 V 12
AFC 13
1 70 V
2 GND
3 6.3 V
4 BLANK
5 G1
6 GND
7 12 V
8 V-SYNC
9 ACL
10 IICDATA
11 IICCLK
12 CLAMP
13 5 V
14 AFC
DEGAUSSING COIL
AC 1
AC 2
1 AC GT601
2 AC GT602
AC INPUT
1 AC INPUT
2 NC CN601
3 AC INPUT
CN502
GT501
TCO
TCO – (GND)
TCO
TCO – (GND)
CN304
TILT – NC TILT +
3 2 1
TILT
CN202
DDC 5V S-RASTER DDC CLK DDC DATA V-IN H-IN GND
7 6 5 4 3 2 1
CN101
GND B GND G GND GND R
6 5 4 3 2 1
SIGNAL CABLE
6 GND_B 5 B_IN 4 GND_G 3 G_IN 2 GND_R 1 R_IN
3 TILT–(BLK) 2 NC 1 TILT+(WHT)
7 DDC 5V 6 S-RASTER 5 DDC CLK 4 DDC DATA 3 V-IN 2 H-IN 1 GND
15 PIN D-SUB refer to pin assignment of product spec.

10-1 SMPS Part Schematic Diagram

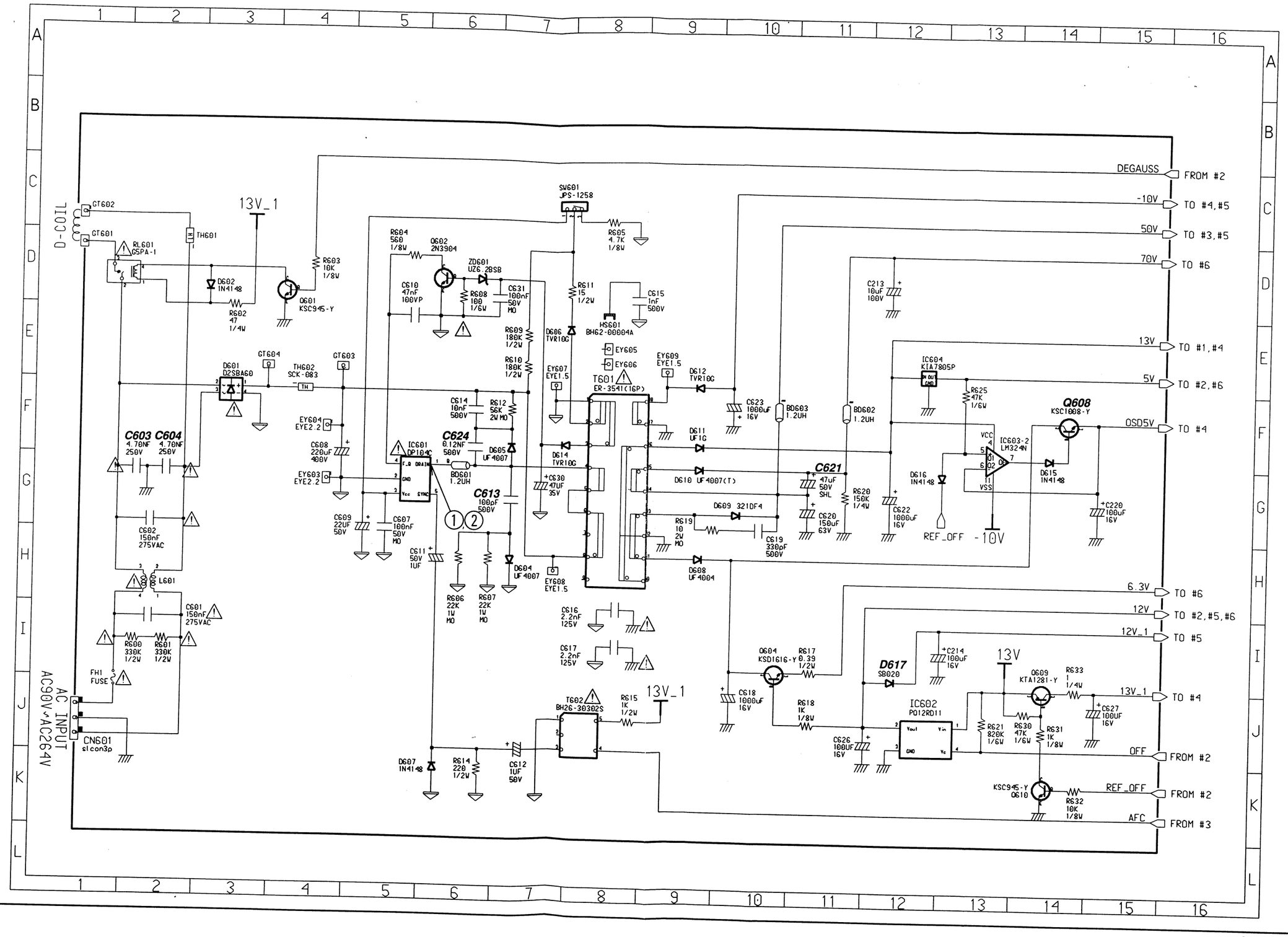


Table 10-1. IC601 (DP104C)

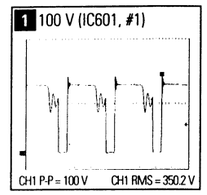
pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	285 V	286 V
2	0.8 mV	0.6 mV
3	18.1 V	18.0 V
4	1.51 V	2.01 V
5	4.98 V	4.98

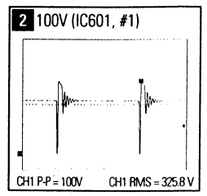
Unit: Vrms

Table 10-2. IC602 (78R12)

pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	13.57 V	13.50
2	12.05	12.05
3	-17.0 mV	-15.5 mV
4	4.99 V	4.99 V

Unit: Vrms





10-2 Micom Part Schematic Diagram

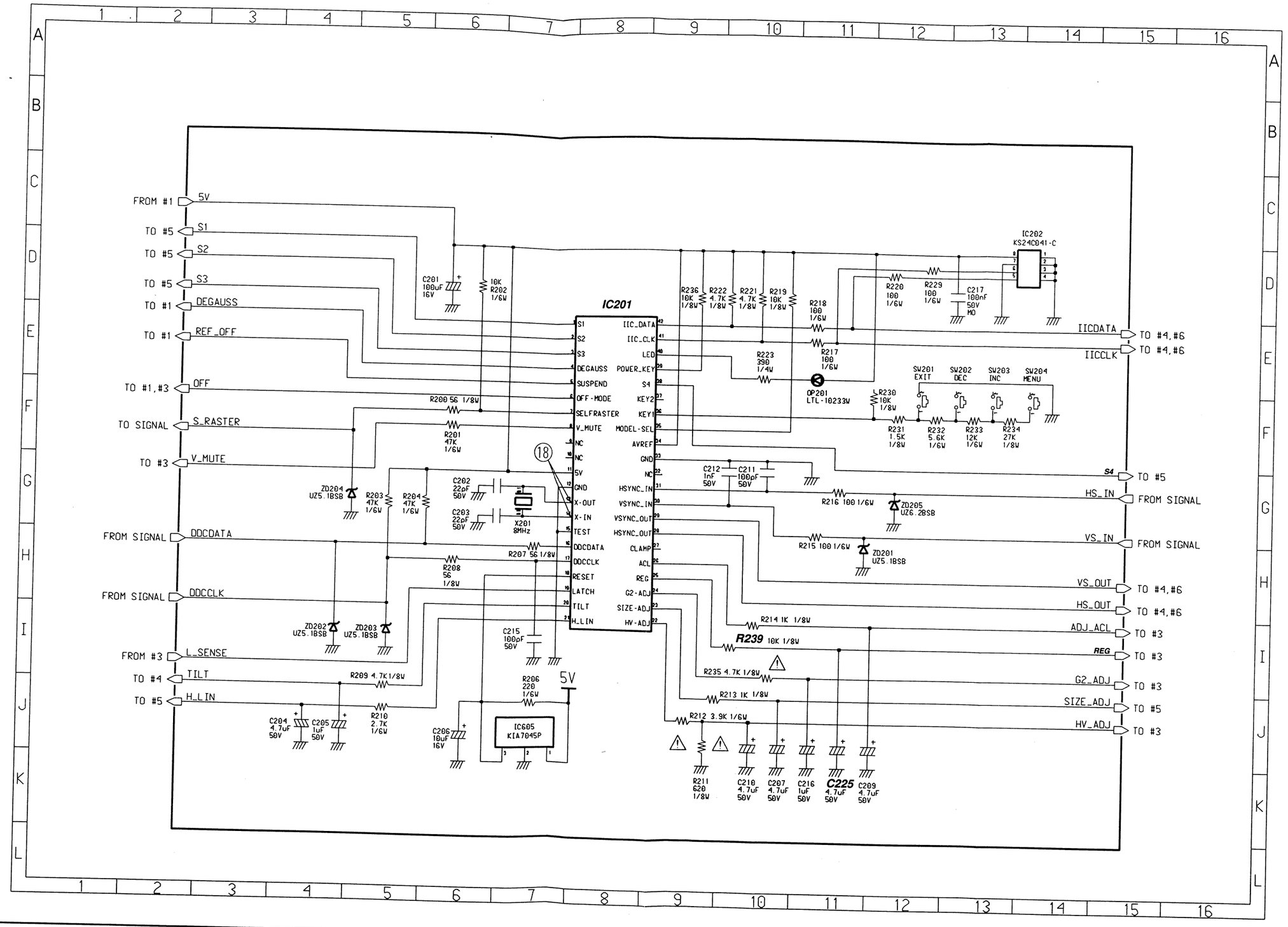
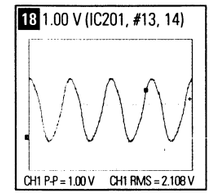


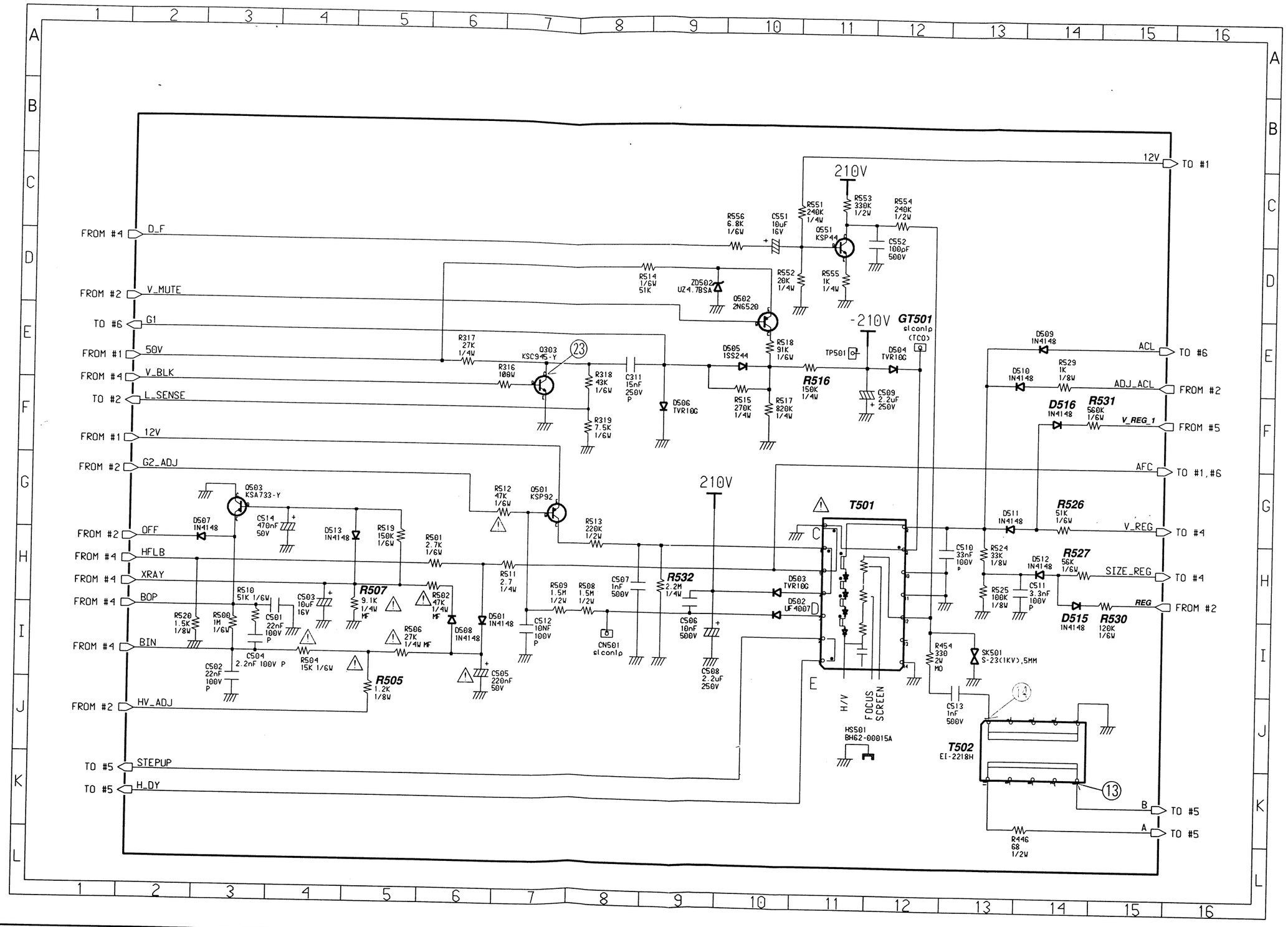
Table 10-3. IC201 (KS88C623IN)

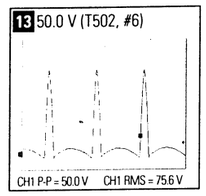
pin #	MODES		pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz		1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	5.01 V	0.47 mV	22	1.02 V	1.02 V
2	5.01 V	-2.0 mV	23	2.91 V	0.31 V
3	5.01 V	-3.2 mV	24	1.14 V	1.04 V
4	-4.9 mV	-4.4 mV	25	7.5 mV	-8.7 mV
5	5.00 V	5.00 V	26	3.99 V	3.99 V
6	4.9 V	4.90 V	27	4.93 V	5.0 V
7	31.2 mV	30.8 mV	28	4.73 V	4.49 V
8	7.96 mV	-7.4 mV	29	11.3 mV	-11.4 mV
9	9.1 mV	-8.5 mV	30	4.5 mV	4.49 V
10	9.9 mV	-9.4 mV	31	0.314 V	3.98 V
11	5.12 V	5.12 V	32	15.3 mV	-14.6 mV
12	15.3 mV	-14.5 mV	33	15.6 mV	-14.8 mV
13	1.13 V	1.13 V	34	5.12 V	5.12 V
14	1.68 V	1.70 V	35	5.11 V	5.11 V
15	15.5 mV	-14 mV	36	5.11 V	5.11 V
16	4.13 mV ~ 3.9 V	41.3 V ~ 3.9 V	37	5.11 V	5.11 V
17	3.66 V	3.67 V	38	5.11 V	5.11 V
18	4.99 V	4.99 V	39	5.11 V	5.11 V
19	4.31 V	4.34 V	40	0.145 V	0.146 V
20	2.49 V	2.49 V	41	5.12 V	5.12 V
21	2.44	0.6 V	42	5.12	5.12 V

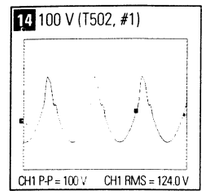
Unit: Vrms

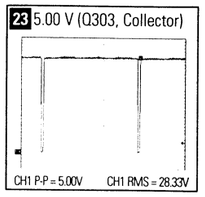


10-3 High Voltage Part Schematic Diagram




13 50.0 V (T502, #6)
CH1 P-P = 50.0 V
CH1 RMS = 75.6 V


14 100 V (T502, #1)
CH1 P-P = 100 V
CH1 RMS = 124.0 V


23 5.00 V (Q303, Collector)
CH1 P-P = 5.00V
CH1 RMS = 28.33V

10-4 H/V OSC & Vertical Parts Schematic Diagram

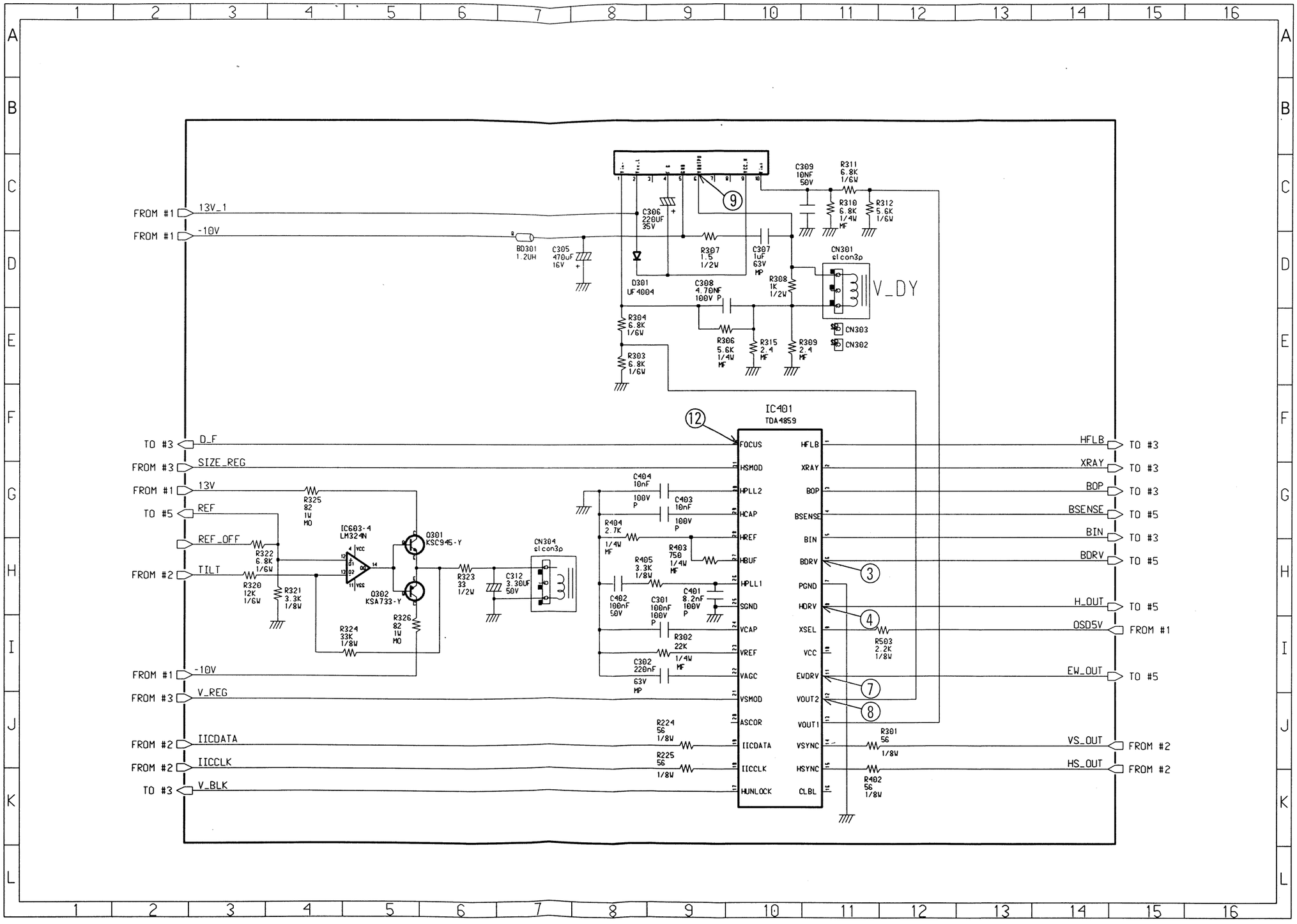


Table 10-5. IC301 (KA2142)

pin #	MODES	
	800 x 600 / 85 Hz	640 x 480 / 60 Hz
1	0.64	0.64
2	13.2	13.0
3	1.5 mV	0.1 mV
4	-10.5	-10.6
5	-11.0	-10.9
6	-3.9 mV	-1.6 mV
7	0 mV	0.1 mV
8	0.1 mV	0.1 mV
9	12.9 V	12.6 V
10	0.64 V	0.64 V

Unit: Vrms

Table 10-6. IC603 (LM324N)

pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	12.01	11.8
2	3.06	3.60
3	5.12	5.12
4	13.5	13.3
5	5.12	5.11
6	5.12	5.12
7	6.51	6.43
8	0.66	3.96
9	1.63	1.63
10	1.63	1.63
11	11.19	-11.1
12	1.63	1.63
13	1.63	1.63
14	0.70	-0.68

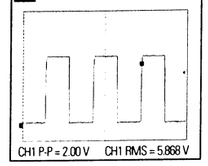
Unit: Vrms

Table 10-7 IC401 (TDA4859)

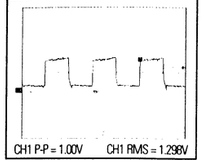
pin #	MODES		pin #	MODES	
	1024 x 768 85 Hz	640 x 480 / 60 Hz		1024 x 768 85 Hz	640 x 480 / 60 Hz
1	0.33 V	-0.15 V	17	24.7 mV	23.9 mV
2	5.64 V	5.68 V	18	5.12 V	5.12 V
3	4.45 V	3.89 V	19	5.12 V	5.12 V
4	2.15 V	1.39 V	20	4.02 V	4.04 V
5	2.48 V	2.48 V	21	5.01 V	5.01 V
6	3.54 V	6.48 V	22	2.69 V	3.17 V
7	-15.4 mV	-14.5 mV	23	3.02 V	3.03 V
8	0.964 V	0.93 V	24	2.66	2.67 V
9	2.01 V	2.02 V	25	-15.4 mV	-14.7 mV
10	11.7 V	11.7 V	26	3.86 V	3.86 V
11	2.73 V	1.86 V	27	1.54 V	2.51 V
12	1.38 V	1.38 V	28	2.57 V	2.56V
13	1.29 V	1.29 V	29	4.54 V	4.51 V
14	-11.3 mV	-11.4 mV	30	5.47 V	5.00 V
15	4.73 V	4.49 V	31	5.47 V	4.99
16	0.76 V	0.64 V	32	6.11 V	6.08

Unit: Vrms

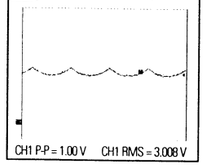
3 2.00 V (IC401, #6)



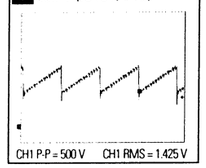
4 1.00V (IC401, #8)



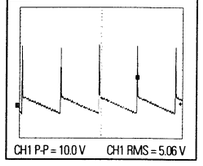
7 1.00 V (IC401, #11)



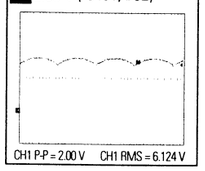
8 500 V (IC401, #12)



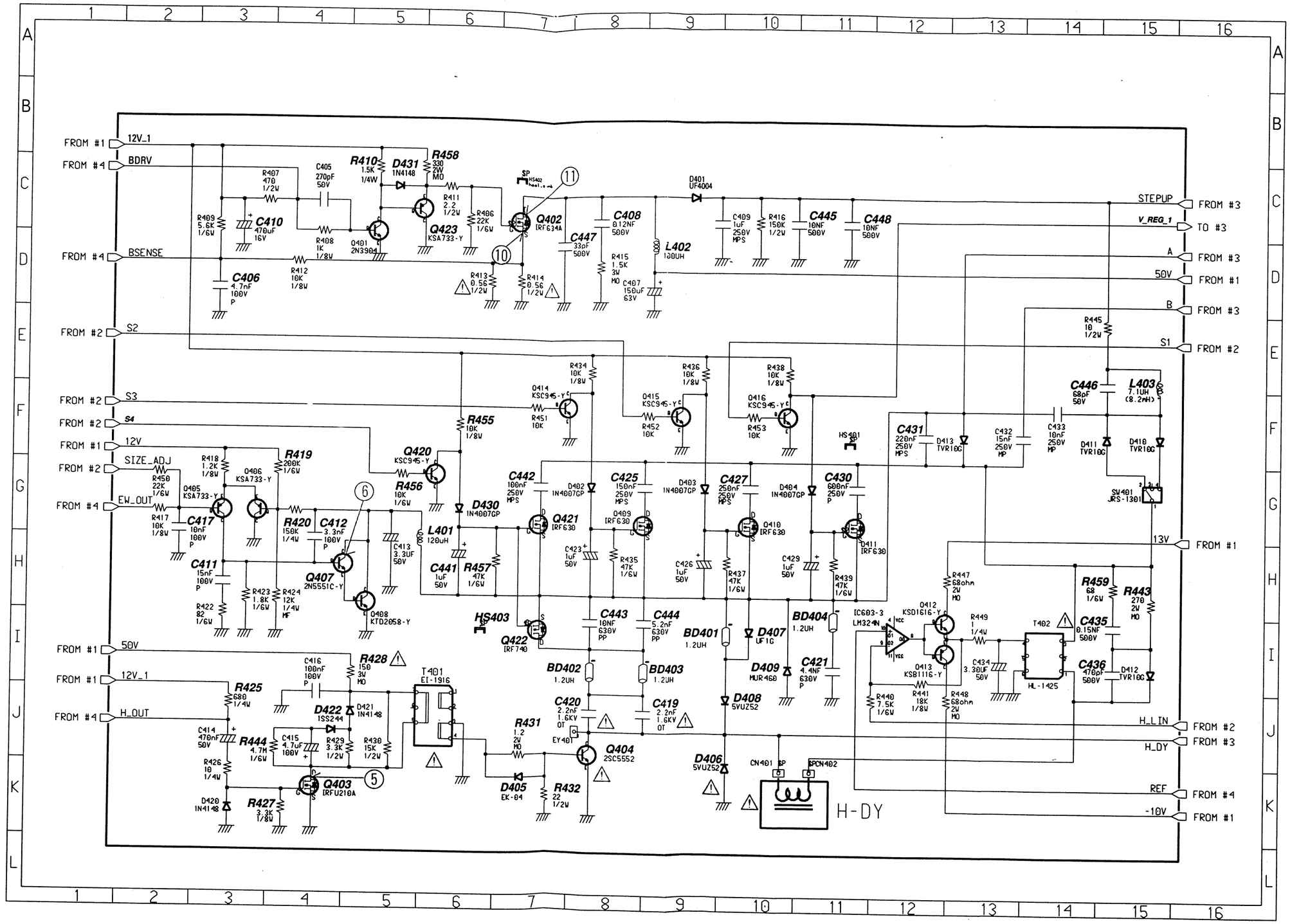
9 10.0 V (IC301, #6)



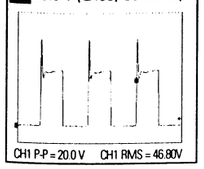
12 2.00 V (IC401, #32)



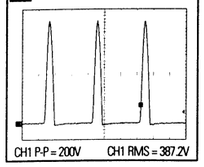
10-5 Horizontal Part Schematic Diagram



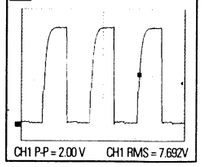
5 20.0 V (Q403, Collector)



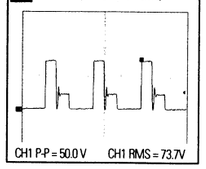
6 200 V (Q408, Collector)



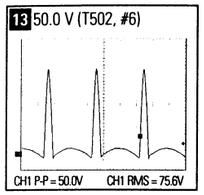
10 2.00 V (Q402, Gate)



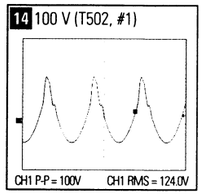
11 50.0 V (Q402, Drain)



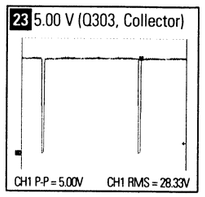
13 50.0 V (T502, #6)



14 100 V (T502, #1)



23 5.00 V (Q303, Collector)



10-6 Video Part Schematic Diagram

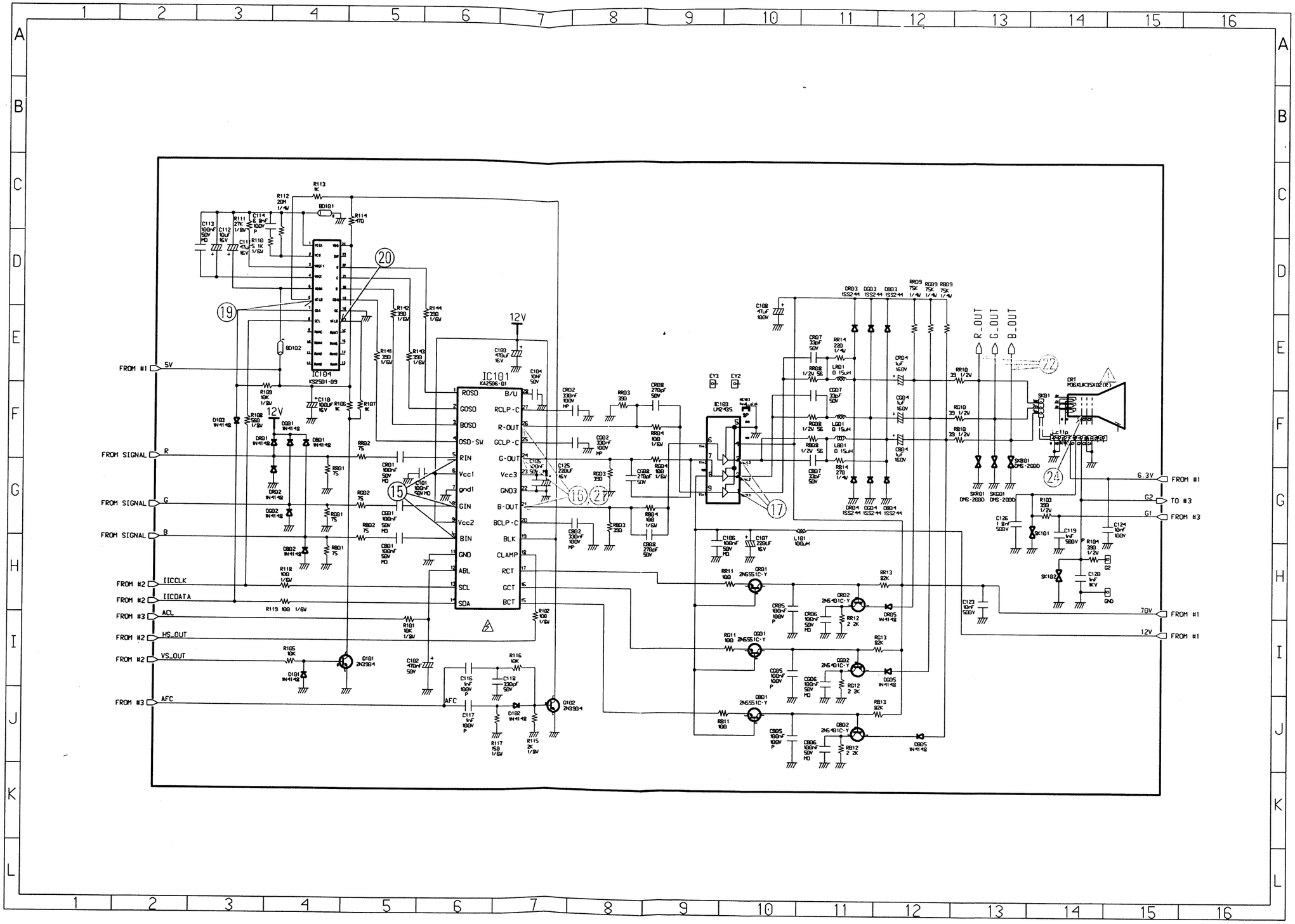


Table 10-8. IC101 (KA2506)

pin #	MODES		pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz		1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	4.6 mV	3.2 mV	15	11.2 V	11.2 V
2	4.5 mV	3.2 mV	16	11.2 V	11.2 V
3	4.4 mV	3.0 mV	17	11.2 V	11.2 V
4	4.0 mV	2.8 mV	18	4.73 V	4.49 V
5	2.42 V	2.45 V	19	4.01 V	4.55 V
6	11.8 V	11.8 V	20	4.35 V	4.34 V
7	1.06 mV	1.0 mV	21	2.42	2.56 V
8	2.42 V	2.44 V	22	1.6 mV	1.5 mV
9	11.85 V	11.8 V	23	11.8 V	11.8 V
10	2.41 V	2.43 V	24	2.40	2.53 V
11	1.44 mV	1.39 mV	25	4.29	4.27 V
12	4.22 V	4.15 V	26	2.55	2.68 V
13	5.11 V	5.11 V	27	4.31	4.29 V
14	5.11 V	5.11 V	28	99.1 mV	99.5 mV

Unit: Vrms

Table 10-9. IC103 (LM2437)

pin #	MODES	
	800 x 600 / 85 Hz	640 x 480 / 60 Hz
1	38.5	36.9
2	39.9	38.1
3	GND	GND
4	2.4 V	2.53
5	2.55	2.68
6	11.8	11.8
7	2.4 V	2.4 V
8	72.8	73.2
9	42.5	40.2

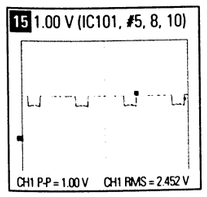
Unit: Vrms

Table 13-10. IC104 (KS2501 ~ 09)

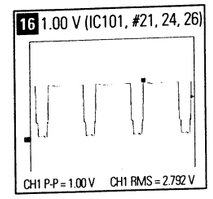
pin #	MODES	
	1024 x 768 / 85 Hz	640 x 480 / 60 Hz
1	1.3 mV	NC
2	2.24 V	NC
3	1.26 V	NC
4	1.27 V	NC
5	4.93	4.91
6	3.99	1.9 mV
7	5.11	4.9
8	5.11	5.3 V
9	NC	5.5 V
10	NC	5.6 V
11	NC	NC
12	NC	4.93

Unit: Vrms

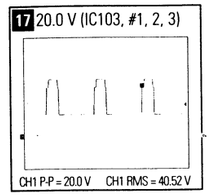
15 1.00 V (IC101, #5, 8, 10)



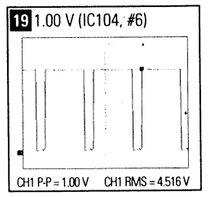
16 1.00 V (IC101, #21, 24, 26)



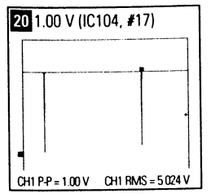
17 20.0 V (IC103, #1, 2, 3)



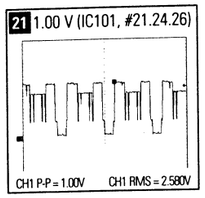
19 1.00 V (IC104, #6)



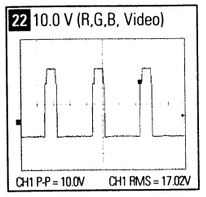
20 1.00 V (IC104, #17)



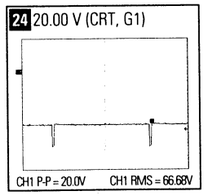
21 1.00 V (IC101, #21.24.26)



22 10.0 V (R,G,B, Video)



24 20.00 V (CRT, G1)



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